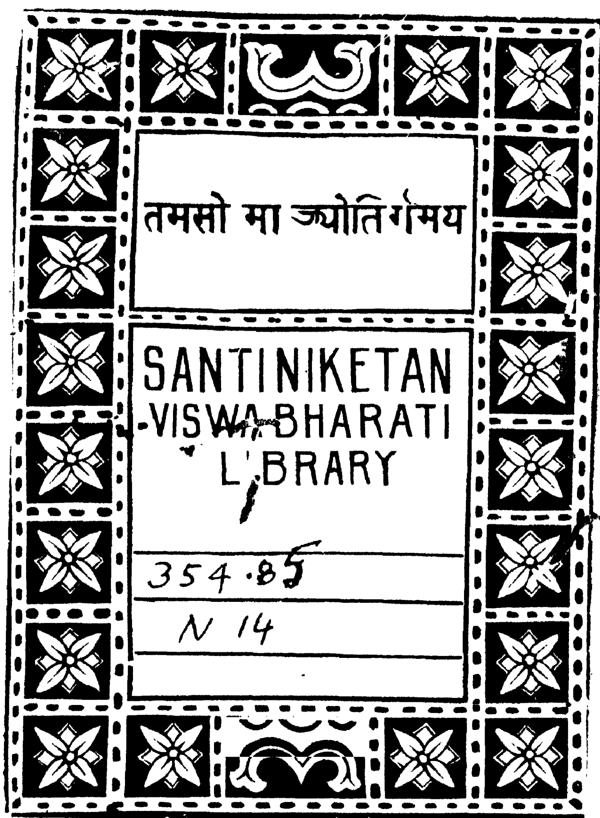


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DEVELOPMENT OF INDIAN RAILWAYS

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INDIAN RAILWAYS

BY

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Dedicated

To

The Memory of

The Late Maharaja

SIR MANINDRACHANDRA NUNDY, K.C.I.E.

of Kasimbazar, Bengal

of unbounded charities

for the advancement of education in India

PREFACE

Indian railway development is a most interesting and fascinating study, connected as it is with the history and the prospects of agricultural and industrial life in the country. Unfortunately the problems of railway transport have been altogether disregarded by economists in India.

An attempt has been made in the following pages to give a connected account of the rise and development of railways in India, the various needs the railways had to satisfy in the pre-industrial era, as well as the types of ownership and management which facilitated a rapid construction. Emphasis has been laid throughout to present in sequence the various problems which Indian railway development had to face and the study has been conducted by periods and not by subjects. The division of the periods of study has been determined chiefly by consideration of changes in railway policy and financial administration, and this has sometimes necessitated a departure from a rigid survey by periods of certain problems.

One can hardly say that such problems like those of policy and management, rates and fares, financial administration and results have been solved finally. These have had a history in the past and are still awaiting solution.

I have discussed these and other kindred problems like railway law, gauge and alignments, and working and traffic results in the light of the larger economic interests of the country.

Some problems, again, are quasi-political. It will be realised that the question of state *vs.* company management in India involves issues which are not as simple as these are in the West. Companies here have been far

different from what they have been in European countries, while the state has not been completely the servant of public opinion. Thus with increased democratisation of the machinery of government the question of company and state management of our railways will have to be re-discussed. Probably the example of Germany, which best combines the features of both company and state managements may offer the ideal solution for India.

Similarly, the question of the separation of railway finance, which was first raised as early as the eighties of the last century, must not be considered as having reached the final solution. Such separation is highly desirable to check many of the evils of state-management, but the convention reached in India in effecting the separation has proved unsatisfactory. Half-way measures in this respect cannot succeed, and there must be a complete and effective separation or no separation at all. In any future scheme there should be no room left for the jealousy either of the Finance Department of the Government of India or of the Indian Legislature.

The net-work of early Indian railways bore the impress of India's backward industrial development and the importance of her agricultural exports. With rapid industrialisation greater attention will be directed towards the exploitation of her internal markets and the movement of inland trade.

The time has arrived for taking a comprehensive view of India's demand for transportation as a whole, and our future railway policy and development should be judiciously co-ordinated with the possibilities of road motor, inland and coastal water vessels, and commercial air transport. The machinery for securing such co-ordination should be set up without delay.

The railway law also requires a thorough revision, and now that the jurisdiction of state-management is

extending, the users of the rail should be afforded better statutory protection, particularly with respect to the carrier's responsibilities in transportation services, rates, fares, and claims, and safety arrangements.

The history of rates and fares in India is a chequered story of confusions of principle and anomalies of practice, and the country needs to-day a scientific system fashioned in the best interests of traffic, industry and commerce. I have pleaded for a regular Rates Tribunal instead of a mere Advisory Committee, which should be instituted with full authority to carry out revision of rates and fares after due examination. I have also considered the subject of reduction in rates and fares and shown how this is intimately linked with the question of improving the standard of efficiency in our transport services.

In considering the subject of line gauges I have indicated the dangers of the policy of drift as is evident in recent railway development. Uniformity of gauge on the broad standard should be our objective, and this must be secured within a reasonable period through the conversion of more congested narrow gauges into the broad standard, and by the encouragement of road motor services as substitutes for the lines with light traffic. In fact, the metre and narrow gauges need critical examination, particularly in view of the prospects of motor traffic.

Finally, I have considered the various reforms carried out in railway working during recent years. These have greatly increased efficiency, but we still need a careful scrutiny of the comparative costs and economy effected by these operating improvements.

This work is based entirely on investigations carried on, during 1927 to 1929, at the London School of Economics, in the preparation of a thesis on which the degree of Ph.D. (Economics) of the University of London was awarded.

The materials for this volume have been obtained almost

entirely from official publications, reports, and records in the India Office, the British Museum Library, and from other works in the Transport Library of the London School of Economics. A bibliography is appended indicating the sources of information, and the author gratefully acknowledges his indebtedness to some of the previous workers in the field.

A large portion of the book was gone through and critically examined by Mr. W. T. Stephenson, M.A., Cassel Reader in Transport in the University of London, and Sir Ernest Bell, Kt., C.I.E., a former Member of the Railway Board. The author records his deep sense of gratitude to these gentlemen for their critical guidance. Neither of them is, however, responsible for the opinions expressed in the following pages.

Grateful thanks are also due to the management of some of the chief railways in Great Britain, Germany, France, and other European countries for enabling the author to obtain practical training in railway operation and commercial work, and a view of comparative railway management. Such acquaintance has proved valuable in critically examining some of India's crying problems of transportation and in envisaging its future.

Acknowledgments are lastly to be made for the timely help extended by the University of Calcutta in the publication of the book.

DEPARTMENT OF COMMERCE,
CALCUTTA UNIVERSITY.
30th July 1930.

NALINAKSHA SANYAL

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CHAPTER I

INTRODUCTION OF RAILROADS INTO INDIA

I. India on the Eve of Railway Construction

In the early part of the nineteenth century, and for a considerable time afterwards, India consisted of long chains of self-contained villages, clinging to time-worn habits and ideas, scarcely knowing one another beyond very limited ranges, and hardly aspiring to be ever bound together as they are to-day with common aims, ideas, and demands. The consolidating powers of the great Moghul emperors had long disappeared and the rising Maharattas were routed. But as yet the new builders of the empire, too much pre-occupied with arduous military and political activities, could not bestow much attention to works of public benefit and towards the security and development of trade and transport. In the disintegration that followed the break in political life and disruption that prevailed for more than a century, economic activities necessarily became very much restricted, and the few roads and inland highways of communication fell into disrepair and reached a most deplorable state. With very few exceptions roads in the modern sense of the term did not exist, and where such had been constructed by wise monarchs, they had been partially destroyed through disuse or by retreating armies, and had become inaccessible to traffic. Thus the only important

highways of commerce were the navigable rivers, but transit along them was necessarily slow and dangerous.

About the country at that time it was remarked : " There never was a country with people so intelligent and rich in which roads were so few and travel so difficult." Over thousands of miles wheeled carriage was unknown and merchandise could only be carried inland for the most part on buffaloes, camels, and pack bullocks at enormous costs (from 6*d*. to 1*s*. per ton per mile). So great was the distress of the animals that they often sank under their burden and " their bones whitening the route acted as landmarks to travellers." [1]

As a consequence prices varied from village to village, weights and commercial practices and even the currency used differed from one part of the country to another, and adding to these difficulties trade was burdened with a number of tolls and duties at cross-roads and market places. In one part grain was valueless while a hundred miles off there was scarcity and still further beyond famine raged. In many places the high gifts of nature were turned into barrenness as the cultivator could send his grains nowhere with advantage. The cotton of Nagpore and Amraoti was brought for sale to Mirzapore, a distance of 500 miles by oxen carrying 160 lbs. each, travelling on an average seven miles a day. The cost of carrying one ton in this manner was about £17-10, and if it rained in the journey " the carrier " often perished under the burden of the saturated cotton in the soft and unmetalled track.[2] Summing up the position Lord Dalhousie wrote : "Great tracts are teeming with produce they cannot dispose of, others are scantily bearing what they would carry in abundance, only if it could be conveyed whither it is needed." [3]

1 W. P. Andrew, Indian Railways. Fourth Edn., 1884, Preface, p. viii.
2 J. Bourne, Railways in India, 1848, Appendix.
3 Lord Dalhousie's Minute, dated 20th April 1853.

II. Road Construction and the First Ideas of Railroads (1832 to 1836)

With the growth of political power and expansion of territories the British administrators in India realised the need for improved means of communication. Warren Hastings undertook as early as 1785 proper construction and repairs of the Grand Trunk Road from Calcutta to the North-West frontiers, portions of which had been surveyed and laid out by Sher Sha and the Moghul kings. Military fair-weather roads had also been constructed for the use of armies on the march, but these were usually left uncared for as soon as their immediate purposes were met.

Real reform in the matter of public road construction under the British regime was begun by Lord William Bentinck during 1828-1835, and although very little statistical data is available, it has been estimated that between 1839 and 1849, that is the decade preceding the year when sanction for railways was obtained, some 30,000 miles of roads of various kinds were constructed in British India at a total cost of about three million and a half sterling.[1]

The first idea of railroads in India was conceived in 1831-32 in the Presidency of Madras when it was proposed before the Parliamentary Select Committee on the Affairs of the East India Company that in consideration of the deplorable state of communication and commerce in that part of the country both canals and railroads should be undertaken so that the whole peninsula might be crossed from sea to sea. The definite line contemplated was one of 150 miles along the embankment of the river Cauvery from Cauverypattam to Caroor, at a cost of Rs. 8,000 only per mile. The scheme was for laying flat parallel rails on a portion of

W. P. Andrew, Indian Railways, 1884, Preface, p. xi.

an improved road, and evidently the vehicles were to be drawn by animals alone. The temporary use of rails in the haulage and traction in connection with constructions, particularly in the Government Tank Department, was also suggested.[1]

In 1836 Captain A. P. Cotton, Civil Engineer, Madras, advocated in a long minute the desirability of railroads in India and their superiority over other means of communication including canals. He conceived for the first time of a line connecting Madras with Bombay by a route of about 862 miles *via* Wallajahnagore, Arcot, Nellore, Bangalore, Bellary, and Poona.[2] It may be noted here that after very long delay and prolonged discussion the alignment then proposed was ultimately approved in general. But, although Madras was the first of the three Presidencies to put forward railroad proposals in India, she had her railways much later than Bombay and Calcutta, and nearly a quarter of a century elapsed between 1831 and 1856 when her first section of line was opened.

III. More Definite Railway Projects (1844-49)

In 1842 Mr. C. B. Vignoles submitted a report to the East India Company on the possibility of constructing railways in India. That was, as Mr. Horace Bell pointed out, the eve of a period of "railway mania,"[3] and naturally such a vast country like India, with her resources and wealth, attracted the notice of many enterprising Englishmen.

[1] Report from the Select Committee on the Affairs of the East India Company 1831-32, Vol. III, Part II, pp. 671-75.

[2] Captain A. P. Cotton's Minute dated 4th May 1836 to Inspector-General of Civil Estimates.

[3] Horace Bell, Railway Policy in India, p. 1.

The idea of constructing a line from Calcutta towards the North-West Frontiers, which ultimately matured into the East Indian Railway, first occurred to its founder Sir (then Mr.) Macdonald Stephenson in 1841.[1] In July 1844 he made an official proposal on the subject to the Government of Bengal. In the same month some prominent men of Bombay, mostly Europeans, discussed the question of Railways in that Presidency and formed a provisional committee of what they called the "Bombay Great Eastern Railway."[2] Sir Macdonald Stephenson had in 1843 been to Calcutta and at his instance the Government of Bengal undertook preliminary enquiries. A survey was made and an estimate prepared for a line, 450 miles in length from Calcutta to Mirzapore, at an average cost of Rs. 1,00,000 per mile. The Government of Bengal promised "to afford to any well-considered project its utmost support."[3] In Bombay the original projectors requisitioned the services of Mr. G. B. Clarke, a civil engineer of the Great Western Railway of England, and he proposed the Thull and Bhore Ghat roads for crossing the mountain barriers to the east of Bombay. The Governor of Bombay received the suggestions with sympathy and had a preliminary survey made by the military engineer officers.

In November 1844, Messrs. White Borret & Company, on behalf of the "Great Indian Railway Company" approached the Court of Directors with a proposal to construct a trunk line across Deccan with branches to the north and south. Three weeks later formal proposals for the East Indian Railway were also placed before the Home authorities.[4]

[1] Stated in evidence before the Parliamentary Select Committee, 1858.

[2] Bombay Railway Collections 1844-45, Parliamentary Papers. Proceedings of the Meeting at the house of Sir Erskine Perry, 13th July 1844.

[3] Bengal Railway Correspondence, 1844-45.

[4] White Borret & Co.'s application dated 8th November 1844; and Mr. M. Stephenson's, dated 2nd December 1844. Bengal Railway Correspondence 1844-45.

The consulting Engineer to the Government of Bombay considered the difficulties in taking a line over the Ghat mountains unsurmountable, and for a time the Bombay projects were dropped. It appears that Mr. Clarke also had on detailed investigation been daunted with the formidable character of the difficulties, which his first proposals to surmount the Western Ghats by two routes would involve, and in 1847 proposed instead a single ascent at an intermediate point known as the Malsej Ghat, with a bifurcation of the line at some point above instead of below the line of hills.

The original projectors in Bombay formed in the meanwhile the Great Indian Peninsula Railway Company, and the former companies having withdrawn from the field, solicited Government assistance and support early in May 1845.

With regard to the capital required it was realised that practically nothing could be raised in India, and the projectors proposed that the Government should guarantee a minimum return " say 4 per cent " from the date of opening of the railway on the sum spent, provided that any surplus of profits over 10 per cent would be re-invested on railway extensions by the company.[1] The railway proposals in India did not at the beginning inspire investors in England with that confidence in the success of the speculation which the originators themselves possessed. Sir Macdonald Stephenson had fully realised this and reported to the Court of Directors that the plan of a guarantee for a minimum dividend, which was " so successfully introduced by the French Government," was approved by the mercantile houses.[2] They would " under these circumstances

[1] White Borret & Co.'s application, dated 8th November 1844; and Mr. M. Stephenson's, dated 2nd December 1844.

[2] Stephenson's Letters dated 2nd and 13th December 1844. Bengal Railway Correspondence 1844-45.

and these alone be prepared at once to take measures for carrying out the undertaking.''

By the beginning of 1845 provisional committees were formed for the East Indian Railway and the Great Indian Peninsula Railway and prospectuses were laid before the Court.[1] The Committee of the East Indian Railway held that the guarantee to the extent suggested (3% then), or some equivalent pecuniary assistance and indication of the approval of the Court of Directors was "a preliminary and indispensable condition of the proposed measure."[2] The suggestions for a guarantee or alternative assistance now included provision for interest on Capital raised even during the period of construction, which the first proposals from Messrs. White Borret & Company did not include.

The Government of Bengal took up the railway cause with great zeal. In a masterly note in April 1845 Secretary Halliday pressed upon the Government of India "the great value of such a railroad, and of the benefits that it would confer upon the people, commercially and politically."[3] Increased rapidity of communication between the seat of the Government and the North-Western Frontier would be obviously of incalculable advantage to the Government. It would unquestionably save a large outlay in troops, and would obviate the problem of the proper place for the seat of the Government of India.

In the same minute it was suggested that the best step that the Court could take at the time for a speedy and efficient disposal of the question was to depute some practical and expert railway engineers from England who would "examine and report upon the line and form a plan for

[1] The first railway prospectus for Indian Railways was that for the E.I.R. laid on 20th January 1845. Sir George Larpent was Chairman and Mr. M. Stephenson was Managing Director.

[2] Resolution of the Committee at Meeting dated 25th February 1845.

[3] Halliday's Minute dated 19th April 1845.

future operations." Regarding the funds it was said that the amount could not be raised in the country or any considerable portion of it unless under a guarantee from the Government. To that mode of raising money there were serious objections, but if otherwise the line was found to be practicable and expedient, there would be no hesitation in advising a loan for the purpose.[1]

Few abler minutes have since been written on the subject of railways in India, and if historians have chosen to call Lord Dalhousie the father of Indian railways, no small credit is due to Mr. Halliday, the Secretary to the Government of Bengal in 1843-50.[2]

In May 1845 the Court of Directors of the East India Company gave their formal recognition to the desirability of railways in India and called the attention of the Governor-General in India to the following peculiar difficulties :[3]

1. Periodical rains and inundations.
2. Continued action of violent winds and influence of a vertical sun.
3. Ravages of insects and vermin.
4. Destructive growth of spontaneous vegetation of underwood upon earth and brick-work.
5. The unenclosed and unprotected tracts of country through which railroads would pass.
6. The difficulty and expense of securing the services of competent and trustworthy engineers.

It was also feared that as the people of India were poor and in many parts thinly scattered over large areas passenger traffic would not be substantial.

[1] Halliday's Minute dated 19th April 1845. Bengal Railway Collections 1845-46.

[2] Comparing Halliday's Minutes and Letters with Lord Dalhousie's famous Minute one cannot fail to discover the remarkable similarity between them.

[3] Court's Despatch to the Governor-General dated 7th May 1845.

As to the conditions on which the railroads were to be sanctioned the Court invited the opinion of the Government of India proposing, in the main, that previous sanction should be obtained from the Government for all construction and terms of agreement, the accounts should be always open to inspection by the Government, and that the rate of profit should not exceed a fixed proportion, the State reserving power to reduce rates, if necessary, with that end in view. The State in return would facilitate surveys and other operations including the necessary purchase of land. Guarantee of a return was considered to be open to many objections and likely to prove unsatisfactory.[1] But some sort of State assistance and encouragement was regarded as essential in view of the special circumstances of the country.

Shortly after this despatch the Court of Directors sent Mr. F. W. Simms, a railway engineer of experience "of tried and proved ability," to make thorough enquiries into the proposed lines and to recommend for construction some feasible line of moderate length. Mr. Simms arrived at Calcutta in September 1845 and immediately proceeded with his enquiries with the assistance of two other local engineer-officers. Over and above the usual problems and difficulties in connection with such work in an unknown country numerous questions were raised and examined in detail by these gentlemen.

Immediately after arrival Mr. Simms gave his first observations on the proposed railways, generally approving the Calcutta-Delhi line and suggesting certain conditions upon which the Government should grant the lease to companies.[2] Three months later he observed in connection with his report on the Madras-Wallajahnagore railroad that

[1] Court's Despatch to Governor-General, dated 7th May 1845.

[2] Simms' Report on the First Observations, dated 12th September 1845.

"It is desirable that every line, however short, should have reference to a general system of railway of which it will ultimately become a part." [1] Great emphasis was laid by him upon a consistent and uniform mode of construction and working, and on the need for uniformity of gauge which "should be strictly adhered to."

In Bengal, where the engineers first began their survey and enquiries, there were at the time three or four other schemes under discussion, over and above the East Indian Railway, proposing different routes for the approach to the North-West. These were the Great Western of Bengal Railway, the Calcutta and Great Eastern Bengal Railway, the Northern and Eastern Railroad Company, and the Direct Northern Railway. The first of these, advocated among others by Mr. W. P. Andrew, was registered about a month before the East Indian Railway Company was formally constituted in June 1845. It was the pioneer in proposing the river route *via* Rajmehal. Sir Mcdonald Stephenson soon managed to have this company amalgamated with the East Indian Railway and the proposals of the other companies fell through.

Early in 1846, Mr. Simms and his assistants came to a conclusion of the first stage of the enquiry and submitted their views.[2] These views were carefully examined by the Government of India and sent to the Court in May 1846, with comprehensive minutes thereon.[3] The Court's six questions were answered and it was stated that all the difficulties could be solved with suitable arrangements. As regards the want of trustworthy engineers (guards, drivers and

[1] Simms' Report on Madras-Wallajahnagore Railroad, dated 30th December 1845.

[2] Mr. Simms' Report to Bengal Government, dated 6th February 1846, and Report of the Engineer Officers to the Government of India, dated 13th March 1845.

[3] Letters from the Government of India to the Court of Directors, dated 9th May 1846, and Governor-General's Minute, dated 28th July 1846.

mechanics) it was proposed that a few native or East Indian young men might be sent to England to be trained there. The line recommended for experimental construction was one from Allahabad to Cawnpore in the first instance, or one from Calcutta to Barrackpore if the former was thought too extensive.

Land was to be acquired by the Government extending the terms of Regulation I of 1824 for that purpose, and to be leased out to the railway companies free. Mr. Simms and others thought that this was all the assistance the State could give and claimed in return to retain a right of entry after the period of lease expired. The Governor-General, however, considered that the assistance to be given ought not to be limited merely to land, for such a small help was not commensurate with the advantages that the State would derive. He thought that in the reduction of military establishment alone which the railway from Calcutta to Delhi would permit, the Government would make a "saving of £50,000 a year on the lowest scale." Consequently, on such considerations principally, it was recommended that a contribution of one million sterling in one sum or an annual grant of Rs. 5,00,000 could be made to that "great line," when completed.

With regard to construction and management, it was agreed that companies should be entrusted with the work, for although the principal objects of railroads in India were political, the commercial advantages afforded the means by which Government could "enlist private skill and capital in this particular service of the State."[1]

Recommendations were also made at the time about future Government proprietorship, steps to be taken in case of failure of maintenance or construction, strict supervision and control by the State, free carriage of mails, conveyance

[1] Hon'ble Mr. Cameron's Minute, dated 1st May, 1846.

of Government traffic, civil and military, at reduced rates, and preparation of accounts and statistics and submission thereof for inspection. The railway companies were to be free from the payment of any duties and taxes, and would exercise complete control over their servants. These considerations were duly weighed in subsequent years when the actual agreements were entered into.

The grand project of a railway of a thousand miles and upwards in a country very deficient in means of transport was regarded by the engineers as a stupendous work requiring great and protracted labour which could only be purchased at an enormous cost. India, they thought, must look to England for the necessary capital. "She must ask back a portion of the tribute, which for years past she has paid to England. Will England be ready to meet the demand?"[1]

In 1846 Sir Macdonald Stephenson presented to the Government of Bengal his definite proposals for the terms of contract, together with the prospectus of the East Indian Railway Company proposed to be incorporated in an Act of Parliament at an early date. Then followed a long and weary triangular fight on negotiations between the promoters of the Companies and the Court of Directors, and between the latter and the Commissioners for the affairs of India, or Board of Control. The contentions mainly centred round the terms of lease and particularly on the question of guarantee to be given by the State. The Court of Directors proposed to guarantee 4 per cent on capital up to £5 million for the East Indian Railway for an average cost of construction of £15,000 per mile, under certain conditions, including the provision for equal division of profits between the company and the Government. The Board of Control generally accepted the policy of enlisting

[1] Official Summary of Correspondence, Bengal Railway Collections, 1845-46.

the help of joint-stock companies for construction and management, but would not agree to that large amount of capital on which interest was to be guaranteed. "The Board would only consent to such a concession, and that in a modified form, on the understanding that the Court of Directors had satisfied themselves that sufficient capital could not be raised without a guarantee, that it shall be strictly confined to the first experiment and to it alone, and that under any circumstances it should not extend to a period longer than fifteen years."[1] These terms were not acceptable to the projectors.

In June 1847, the East Indian Railway Company was registered, and the Directors of the Company again pressed for a modification of the conditions proposed. The Chambers of Commerce of Manchester and Glasgow strongly represented at the same time the case for an early introduction of railways in India, particularly with a view to facilitating the cotton export from Bombay.[2] It was urged that better communication in India would enable that important staple of the country to develop largely and to successfully compete with cotton from America, with which country the political relationship of England was becoming more and more strained.[3] Successive representations were made by the Court of Directors to the Board suggesting modifications, while the Companies failed to raise their stipulated amount of deposits in spite of repeated extension of time. The money market had grown very tight on account of the French Revolution and financial crisis in England about that period. Ultimately the Board reluctantly consented to raise the rate of guarantee from 4 to 5 per cent, and to extend the period from 15 to 25 years. In August 1847,

Board's Letter, dated the 19th December 1846.
Davidson, Railways in India, 1868, pp. 64-65.
Chapman, Cotton and Commerce of India, 1851.

the E.I.R. agreed to construct two sections of lines from Calcutta towards Burdwan and from Allahabad towards Delhi, on these terms. Thus the obstinacy of the Board of Control led to a loss of three valuable years, and compelled the Government to accept heavier liabilities on account of a higher rate of guaranteed interest. In 1845, the prospect of a mere 3% guarantee drew to the East Indian Railway more capital than could be accommodated while in 1847 nothing short of a 5% guarantee could attract the requisite amount.[1] There were further difficulties in store yet.

In July 1847, the Court of Directors represented the desirability of permitting the construction of short experimental lines not only in Bengal, but in Bombay and Madras as well. Complaints were made in the Press about the exclusive favour of Government to Bengal and to the United Provinces. The Board, not without some hesitation, sanctioned an experimental railway from Bombay to Kalyan in September 1847, but declined to entertain the Madras proposal as there was no joint-stock company in existence pledged to a particular road there. The Great Indian Peninsula Railway Company demurred for a time on some of the terms proposed to them, but ultimately agreed in June 1848, to the construction.

The Companies, however, failed to raise the capital required, and some contention arose as to the nature and extent of the guarantee. The railway companies took the guarantee to be one of 5 per cent to each individual shareholder for 25 years, while the Court of Directors intended the guarantee to refer only to such sums as were paid into their treasury by the companies in their collective and cor-

[1] Evidence of Mr. D. I. Noad before the Parliamentary Committee of 1858. Also Mr. M. Stephenson's Letter, dated the 24th June 1845, to the Committee of the East Indian Company.

porate capacity. Many letters were written and interviews held until a crisis was reached in January 1849, when the Court proposed to the Board of Control to break off negotiations and to return to the railway companies their deposits so far received.[1] Suggestions were then made for undertaking the construction by the agency of the State itself.

Great was, however, the anxiety to secure the construction of railways in India by private companies with capital raised in England.[2] The Secretary to the Board of Control had some further negotiations with the Companies and the Board finally acceded to a grant of an absolute five per cent dividend without limit of time.[3] Although not quite satisfied with the absolute surrender, the Court consented to the alterations, and on the 17th of August 1849, the first contracts between the East India Company and the East Indian and Great Indian Peninsula Railway Companies were signed.

Thus after a delay of more than four years the first stage in the history of Indian Railways was reached and a policy of experimental lines was inaugurated.

IV. Nature of First Contract

The substance of the first agreements was that the Government relieved the shareholders of all risk, gave them some expectation of profit over and above the guaranteed interest, and claimed in return reasonable powers of control and ultimate right of purchase.[4] The principal defects in the contracts lay in making no provision for the State's participation in the profits, in permitting a

[1] Court's Letter to Board, dated the 29th January 1849.

[2] Juland Danvers' Evidence before the Parliamentary Committee of 1858.

[3] Board's Despatch to the Court of Directors, dated the 19th March 1849.

[4] Bell, Railway Policy, 1894, p. 60.

fixed rate of exchange to govern the transactions, in allowing the guarantee to run from the day of deposit of money and not from the date of opening of the lines, in providing little check on the capital expenditure of the companies, and in granting the private enterprisers opportunities for enjoying the full benefit of unearned increment in the value of the property when the time for the State purchase of the railways came. The more important provisions were, in brief, the following :—

1. The Contract was for 99 years, and a guarantee of interest on all money paid into Government treasury was given for the whole period.

2. The amount advanced for the guarantee was to be repaid from the profits of the railways, half the excess over the guaranteed minimum being so applied, the other half going to the shareholders.

3. The Government retained the power, after 25 or 50 years, of purchasing the railway at the mean market value in London of the shares during the three years preceding the purchase; but the railway companies could surrender their lines at any time to Government, claiming the whole amount spent on the undertakings back either in a gross sum or in annuities.

4. Land was to be provided free by the State for the railways and for all works connected therewith.

5. The route, gauge, construction, gradients, etc., must all be sanctioned by Government and alterations should be carried out as required by the State.

6. The Government had entire control and supervision of the working, as well as free access to all books, papers and accounts, and power to approve the rates and fares, and to reduce them when the railway paid more than 10 per cent.

7. A Government Director with the power of veto on all proceedings would sit on all Railway Boards of Directors. Mails and Postal servants would be carried free and troops and military stores, etc., at reduced fares and rates.

8. Government bound itself to promote all necessary legislation.

9. All money transactions were to be calculated at the rate of 1*s*. 10*d*. to the rupee.[1]

The rate of interest guaranteed varied from 4½ to 5 per cent as the condition of the money market permitted.

In subsequent years many of the drawbacks of the first contracts were discovered and cured. The principle of guarantee in order to attract capital towards undertakings of great public benefit can by no means be regarded as unsound. It had been tried with success in France and in various colonies of the British Empire. But the Indian guarantee killed effort for economy, promoted recklessness, and involved the country in liabilities much beyond what the people could bear or the needs of the time could justify. As Sir William Acworth pointed out, it would have been eminently a better policy if instead of such an absolute guarantee the State had proposed to take some shares in the railway companies with the provision that private capitalists would receive all the net earnings towards payment of a minimum dividend to them, after which if there was a surplus the State would participate in a proportionately increasing ratio. Thus the State association would inspire confidence in the minds of the investors, while future benefits could be largely secured for the State.[2]

[1] Juland Danvers, First Administration Report on Indian Railways up to 1859, pp. 45-59.

[2] Acworth's Comments on Paper read by Mr. Horace Bell before the Royal Society of Arts, dated April 11, 1898.

V. Experimental Lines undertaken

In November 1849 the Court informed the Government of India of the final settlement. Shortly afterwards detailed instructions were despatched urging the beginning of the first section of experimental line from Calcutta to the North-West at once.[1] Mr. Simms who was then the Consulting Engineer to the Government and the first Director of the Railway Department, modified some of his previous recommendations in the light of limited financial resources, and agreed that the terminus at Calcutta should be on the other side of the river Hooghly at Howrah, and not in the heart of the city as was originally proposed by him. Some of the suggestions of the Court were taken strong exception to, and opinions were expressed on the problem of gauge and the nature of construction.[2]

Lord Dalhousie had by this time become the Governor-General of India. He had acquired much valuable experience in England, on railway administration, as President of the Board of Trade. He as well was not satisfied with the proposals of the Court of Directors. In a masterly note, which has come down to posterity as one of the ablest documents connected with the development of railways in India, he expressed regret that the Hon'ble Court had left him no discretion as to the district most suited to the experiment. In his opinion the line of country above Allahabad was the best portion where the experiment ought to have been made with a definite hope of success. A single line of railway with earthwork, masonry, bridges, etc., calculated for an eventual double line was to be constructed. Further, a standardised gauge was to be uniformly adopted.[3]

[1] Court's Despatch, dated 14th November 1849, and 19th March 1850.
[2] Simms' Report to Secretary, Government of Bengal, dated 29th April 1850,
[3] Dalhousie's Minute, dated 4th July 1850.

As regards the question of the proper gauge for the railways of India, Mr. Simms proposed that it should be 5 ft. 6 in.[1] Lord Dalhousie agreed that, in view of the dangers likely to be caused by high winds, particularly on bridges, curves, and open places, the gauge should be broader than the English standard of 4ft. 8½in. He preferred however six feet which was then "recommended by engineers of eminence in England." Mr. Simms' suggestion, which he contemplated as early as 1845, ultimately received approval and was adopted. This decision for a 5 ft. 6 in. standard for the gauge of Indian railways was one of the most unhappy incidents in their history. The evils arising out of a break of gauge, which every one was so anxious to guard against from the beginning, could not be averted in later years. The Government of Lord Lawrence came to realise that the highly expensive construction of broad gauge lines left them no alternative but to recommend a less expensive narrow gauge railway for parts of the country which could never remunerate the higher standard and would have otherwise to go without railways altogether. The result has been most disastrous, the country having had to develop no less than four distinct gauges varying from 2 ft. to 5 ft. 6 in. in different parts. In addition to the usual difficulties in handling traffic and in more economic user of rolling stock, the special gauges of India have caused the railways literally to starve when abnormal conditions prevail and fresh stock cannot be obtained from England. The railways have been dependent on England for most of the supply of stock and when that country fails, the extraordinary gauges do not permit any other country to be looked to for assistance temporarily.

In August 1850, the Government of India finally communicated to the Government of Bombay the sanction

[1] Simms' Report to Secretary, Government of Bengal, dated 29th April 1850.

for the construction of the first section of railway work in that presidency, and for the time being the policy of short experimental lines was accepted.

VI. Dalhousie's Policy of Trunk Routes

Lord Dalhousie was not to be satisfied with only one small experiment, which he apprehended might not prove encouraging. As soon as the first sod for the small section was turned he called the attention of the Court of Directors to the necessity of broad trunk lines commensurate with the needs of the country.[1] In the meantime Major J. P. Kennedy, sometime consulting engineer to the Government of India, wrote a strong memorandum, embracing many topics, on the railways of India, particularly criticising the Government's policy and the routes approved and proposed. He emphasised the necessity of keeping in mind "how the risk of Government guarantee shall be borne, under the worst aspect that risk can assume."[2] Accordingly he claimed that the general system of railways must be thought out with due regard to the great geographical features of the country, that force upon us the knowledge of what the great arteries of commerce must necessarily be. New alignments were proposed and twelve general rules were suggested as to regulating gradients, curves and dimensions, etc., "with a view to guard future projectors from the errors of the Great Indian Peninsula and East Indian Railways." The whole memorandum was so damaging to the then prevailing ideas of construction that all the consulting engineers were called upon to express their opinion thereon, and Lord Dalhousie himself

[1] Lord Dalhousie's Minute, dated 20th April 1853.

[2] Major J. P. Kennedy, Memorandum on Indian Railways, dated 14th September 1852.

examined the whole question thoroughly once more. The outcome of this was the famous minute of 20th April 1853 by this sagacious statesman. Lord Dalhousie took the opportunity of emphasizing the need for great trunk lines. "It cannot be necessary for me," he began, "to insist upon the importance of a speedy and wide introduction of railway communication throughout the length and breadth of India." The political advantages to be derived were immeasurable, and the commercial and social advantages which the country would secure were beyond all calculation. "Moreover, England was calling aloud for the cotton which India did already produce in some degrees," and the scope for an increased demand for articles of European manufacture in the most distant markets of India would be immense. "I conceive," Lord Dalhousie wrote, "that experimental lines of small extent are at this day no longer requisite." If the lines were judiciously selected, well and economically coustructed, and safely and thriftily worked, there was no doubt that they would be remunerative. And even if the railways should not prove profitable, the many other direct and indirect benefits, political, social, and commercial, would be so great "as to render the payment of guaranteed interest a burden which the Hon'ble Company may cheerfully and contentedly bear." It was his opinion that the construction of the railways by private companies under the supervision and control of Government was the best policy, and the "creation of great public works, which although they serve important purposes of state, is no part of the proper business of a Government." Lord Dalhousie appears to have been completely swayed by the theories of economic individualism of his age. He further argued that the utter helplessness of the Indian community to do anything for itself and its total dependence on the Government was one of the greatest drawbacks of the country. It was therefore

eminently desirable to encourage private enterprise in all semi-commercial undertakings. His anxiety for attracting English capital and enterprise to Indian industries and commerce was great, and he believed that "the successful employment of English capital and English energy in railway undertakings" would lead to more extensive employment of "similar efforts thereafter, in connection with the products and trade of India."

The dangers of the guarantee, the possible neglect of economy and exertion, as well as vexatious interference from officers of the Government were all foreseen, but it was thought that such apprehensions were not well founded. Here Lord Dalhousie erred, as subsequent events proved.

Three main trunk routes were proposed, the first in preference being that from Calcutta to Delhi and the North-West Frontier. The other two were lines from Bombay towards Delhi, and from Madras towards the west coast. Several portions of the works were recommended to be carried on simultaneously, and the entire line from Calcutta to Delhi was, in his opinion, to be constructed by one company, preferably the East Indian Railway. For the upper portion of this line, from Allahabad northwards, the original projectors were the Great North of India or the Upper India Railway Company.[1] After Lord Dalhousie's recommendations they had to withdraw from the field.

Dalhousie's Minute was sent to the Court by the Government of India with the hope that the Hon'ble Court would "resolve at once to engage in the introduction of a system of railways into this Indian Empire, upon a scale commensurate with the magnitude of the interests involved, and with the vast and various benefits, political, commercial,

[1] Letter from the Solicitor and Chairman of the Great North of India Railway, dated 24th December 1852, and 24th January 1853, to the Court of Directors.

and social, which that great measure of public importance would unquestionably produce.''[1]

In August 1853, the Court replied fully concurring with the Government of India.[2] The Board of Control was still sceptical, but the steady and ceaseless demand from all quarters ultimately prevailed, and by the end of the year all objections to the taking up at once of great trunk lines in all the three presidencies were withdrawn.

The previous agreements with the railway companies had accordingly to be extended and modified. New contracts were drawn up between the East India Company and the East Indian Railway for construction up to Delhi, and between the former and the Great Indian Peninsula Railway for the whole line up to Northern India on the one hand and to Raichur to the South on the other.

In the mean-time the projects for the Madras railways had been revived. In 1849 Mr. Arbuthnot in England and the public in Madras pressed the Court of Directors and the Government of India once more for the grant of facilities to a joint-stock company for the construction of railways in that presidency under terms similar to those granted in Bengal and Bombay. The Board of Control was difficult to be convinced. They were afraid that the simultaneous undertaking of railways in different parts would lead to a great rise in the price of materials and capital would not be available. There would be difficulty in conveyance both by sea and land. The hesitation of the Board created in some quarters the belief that the Government of Madras intended to undertake the construction by themselves.[3] Under directions from the Board, Colonel Pears (then Major) of the Madras Engineers, carried out a thorough

[1] Government of India Letter to Court of Directors, dated 4th May 1853.

[2] Court's Despatch, dated 17th August 1853.

[3] Letter of the Directors of the Madras Railway Company to the Court, dated 20th February 1850.

enquiry into the different projects and by the end of 1851 he not only made out a strong case for the railways in Madras, but urged with great force the need for an experiment in that presidency of a national system of railways with purely Government ownership and construction.[1] He thought that by the conditions granted elsewhere " the risk of ultimate failure falls on the country; while on the other hand, should it prove successful, a tax amounting to 5 or 6 per cent on the capital invested will be levied in favour of shareholders in the shape of tolls, beyond that which is required to meet the ordinary interest of the capital." The exercise of Government supervision and control would, he believed, " become almost, if not altogether inoperative." It will be seen later how far Colonel Pears' warnings came true.

The Government of Madras fully concurred with the proposals,[2] and the Court of Directors also appeared to be favourably disposed to the suggestions of an experimental Government undertaking. But the Board's view was: " It must be an object of very high importance to attract the investment of British capital, skill, and enterprise, to undertakings for the improvement of our empire."[3] The system of contract was therefore the more suitable as eminently conducive to that end. The Court of Directors was unwilling to cause further delay by continuing the controversy and at once proceeded to draw up an agreement with the Madras Railway Company. In May 1852, a contract for a short experimental line was made, and later with the adoption of Lord Dalhousie's new policy of trunk lines fresh agreements were entered into. The Madras Railway

[1] Major Pears' Reports, dated 5th March, and 15th December 1851. Also his Note on Kennedy's Memorandum, dated 1st February 1853.

[2] Letter from the Government of Madras to the Court, dated 7th June 1851.

[3] Davidson, Railway of India, 1863, p. 339.

Company was formally constituted in July 1852, an Act of Incorporation being obtained a year later. In December 1855, and again in August 1858, contracts embracing the whole system of Madras trunk lines both towards the west coast with branches and towards the north-west to meet the line from Bombay, were finally signed.[1]

The fourth important trunk line company which obtained sanction in the same period was the Bombay Baroda and Central India Railway. This line was originally contemplated as early as 1847 for facilitating the conveyance of cotton from Guzerat and Ahmedabad to Bombay, but daunted by the formidable nature of watercourses which it crosses between Surat and Bombay the original projectors confined themselves to the section from Surat to Ahmedabad. In 1852 Colonel Kennedy joined the company, which was in that year formally constituted, as consulting engineer. In November 1855 a contract with the East India Company was signed for the construction of that short section. In the meantime Colonel Kennedy drew the attention of the Government to the superior advantages, as he claimed, of the sea-coast line from Bombay towards the north, and for some years great competition followed between the Great Indian Peninsula and the Bombay Baroda Railway Companies for the approval of their respective routes. Lord Dalhousie had all the possible approaches from Bombay thoroughly examined, both from the engineering as well as from traffic points of view, and in 1855 gave his approval to the climbing of the ghats.[2] The Bombay Baroda and

[1] Evidence of H. Walker before Parliamentary Select Committee of 1858.

[2] In a paper on "Rationale of Railways in India," read before the Royal Society of Arts in June 1890, Sir Theodore Hope said that although Lord Dalhousie was inclined to favour the direct route in Surat, preference to local feelings for an early entrance to the Kandeish plateau had to be given. The Government and merchants of Bombay realised their mistake in later years, and after pleading in vain for many years got the direct line, only in a cramped form.

Central India Company soon discovered the poor capabilities of Surat as a port and with the approval of Lord Dalhousie Colonel Kennedy re-opened the question of a direct line from Surat to Bombay. Sanction was finally given to this portion in February 1859, and the original contract was accordingly modified.

The policy of experimental lines thus gave place to that of trunk railways, commensurate with the vastness of the country and the importance of communication there. Lord Dalhousie's schemes thus began to materialise, and after years of anxious struggle the Companies won the battle.

CHAPTER II

RAILWAYS UNDER THE "OLD" GUARANTEE TERMS (1850-1868)

I. Further Companies formed

The policy of securing the construction of railways in India by private companies receiving guarantees of interest on their capital outlay was vigorously carried into effect in the next few years, and remained in force until 1868, when it found a check at the hands of Lord Lawrence's Government.

Soon after the first four trunk lines were approved Lord Dalhousie set himself to consider how the communications in the Eastern and Western frontiers could be improved. Burma was annexed in 1854 and the question of quicker transit between Calcutta and Dacca, and Dacca and Akyab, became urgent. In 1855 Lt. Greathead of the Bengal Engineers prepared a survey report proving the possibility of a remunerative line from Calcutta to a point on the banks of "the great river Ganges," on the route to Dacca. Acting upon this and another report by Major Abercrombie the prospectus of the Eastern Bengal Railway Company was put forward in the same year. More detailed plans and estimates were made in the course of the next two years under the advice of the able engineer Mr. Purdon. The Court of Directors readily acquiesced and the Company was incorporated by an Act of Parliament in 1858. In July the same year the contract was signed, and arrangements for construction were proceeded with immediately.

At about the same time the Calcutta and South Eastern Railway was projected with large schemes of lines from Calcutta towards Chittagong through the Sunderbunds. The absurdity of the idea soon became evident and in 1856 the Company was formed with a modest proposal to construct a short line from Calcutta to the new port Canning on the north of the river Mutlah. The promoters were so sanguine of success that they sought to raise capital without a guarantee. They were however soon disappointed and were obliged to solicit Government assistance. The Government of India did not view the project with favour but still conceded a 5% guarantee and the contract was signed in March 1859.

Attention to the construction of lines in Sindh and the Punjab was drawn as early as 1852 when Sir Charles Napier discovered the possibilities of the port of Karachi, which was then a mere fishing village. Mr. (afterwards Sir) Bartle Frere, the Commissioner in Sindh, brought it to the notice of the Government of Bombay and surveys were made for a line between Karachi and Kotree, a distance of about one hundred miles. For a time direct State construction of the railway was discussed but the idea was soon dropped. In 1854 Mr. W. P. Andrew, at a ' private request " made to him promoted the Scinde Railway Company, and in January 1856, the contract with the East India Company was entered into.[1] But new difficulties arose on account of constant interference with the work by the local authorities. Ultimately, after eighteen months had been wasted and no less than eleven surveys made, the original route was approved. In 1857 the constitution of the Scinde Railway Company was greatly modified and powers were granted by Parliament for

[1] Evidence of Mr. W. P. Andrew before the Parliamentary Committee of 1858.

extension of the undertaking. Accordingly in 1859 contracts were made for the construction of another section of line from Multan to Amritsar in the Punjab, and for working a Steam Flotilla on the Indus connecting the Scinde and Punjab sections. In the same year the Company was also entrusted with a line connecting Delhi and Amritsar. The four sections were then kept separate and distinct under the names of Scinde Railway, Indus Flotilla Company, Punjab Railway, and Delhi Railway, although conducted through the agency of one company.[1] After a number of years the Indus Flotilla Company which proved extremely unremunerative was closed and the steamers were sold to the Government. In 1869 the three railway sections were amalgamated into the Scinde Punjab and Delhi Railway. In January 1886, the State acquired the whole system and along with other portions constructed by itself at the time, brought it under direct State management.

The Great Southern of India Company was constituted in 1857 with a view to construct lines in the extreme south of India, from Negapatam to Trichinopoly, with extensions towards the north to meet the Madras Railway at Errode and to the south to Madura and Tuticorin. A contract for the first section was entered into in September 1858.[2] It was at one time intended that a light description of railway on this line would be constructed by Government direct, but the proposal was dropped as the estimated cost was considered to be too high. The Great Southern of India Company originally constructed their line on the standard gauge, but in 1873 the Company was amalgamated with the Carnatic Railway, under the name of the South Indian Railway, and the system was converted into one

Juland Danvers, Report on Indian Railways 1859.
Ibid.

of metre gauge. The new Company has built up one of the most important systems of railway network in South India.

Two attempts were made towards the latter part of this period 1850-1868, for constructing railways without a guarantee. The Indian Branch Railway Company constructed the first unguaranteed line on a special gauge of 4 ft. in 1863, between Nalhati and Azimgunje, a short branch from the East Indian Railway in Bengal. The same Company also constructed forty miles of 5 ft. 6 in. gauge railway between Cawnpore and Lucknow in 1867. The Company however failed to carry out its projected lines in Oudh and Rohilkhund for want of funds. Even the section between Cawnpore and Lucknow could not be completed without a substantial loan and other assistance from Government. Ultimately, the Indian Branch Railway Company changed its name into the Oudh and Rohilkhund Railway in 1867, and the Secretary of State granted the new Company a guarantee of 5% on its capital, proposals for the grant of subsidies and other assistance upon the basis of mileage opened having failed.

The other unguaranteed line was a short section constructed in 1865 on a 3 ft. 6 in. gauge in South India by the Indian Tramway Company from Arconum to Conjeeveram. Great difficulty was felt in securing capital and in 1867 Government extended to the company a modified guarantee of 3%. Proposals were made to convert the line into broad gauge extending it to Cuddalore. In 1869 the Company changed its name into the Carnatic Railway and a new contract was entered into. Shortly afterwards negotiations were undertaken at the suggestion of the Secretary of State, to have the railways in South India amalgamated. The Madras Railway Company did not agree, and finally in 1873, the Carnatic and the Great

Southern of India Railways were combined into the South Indian Railway.[1]

This is in brief an account of the formation of new companies between 1855 and 1869. Some attempts had been made for the construction of short lines by the State itself or with assistance other than the guarantee. These will be dealt with in a following chapter.

II. Routes adopted and Progress of Construction

The ultimate line of routes adopted by the various lines and the progress of work between 1850 and 1868 can best be explained with reference to a railway map of the country for the latter year, attached herewith. There was often great difficulty in coming to a settlement as to the alignment, and as had already been pointed out, much delay was caused to the construction of the railways for this reason. On the East Indian Railway contention centred round the choice between the river route *via* Rajmehal, which was then known as the "Commercial" route and the direct route known as the "Political." Lord Dalhousie advocated the direct one and the experimental line was accordingly begun from Calcutta to Raneegunje. After construction had been actually in progress the Government of India changed its decision and the river route was adopted. Although it was natural in the first instance to follow the trade route which lay along the river, the necessity for a more direct connection between Upper India and the port of Calcutta, was soon perceived and in subsequent years chord lines had to be constructed to shorten the journey. India has not suffered very much on this account, and a very large

[1] *Supra*, p. 29.

and important area has been opened up. If the shorter route had been adopted at the start, probably the loop lines would not be constructed sufficiently early to cope with the extensive traffic that they carry now-a-days. As regards the terminus at Calcutta, Mr. Simms originally proposed it should be at a central part of the city, but financial limitations stood in the way and the present site at Howrah had to be adopted. The problem of crossing the river and approach to the main city has ever been a difficult one, and traffic has continually outgrown the capacity of ferries. From time to time proposals have been made to take the line into Calcutta by a bridge. In 1869 this suggestion was superseded by the decision to construct the present pontoon road-bridge. In 1880 the Hughly bridge was sanctioned, and at the present time a new bridge at Bally is under construction.

The progress of work on the East Indian Railway met with a check at the time of the Indian Mutiny and great losses were suffered. On the whole, however, the opening of the different portions was effected with rapidity, depending primarily upon the construction of the large bridges over the Sone, Tonse, and the Jumna. The sanction for the first chord line, which is now called the main line was obtained in 1865, and it was opened in 1871. By that time practically the whole of the principal constructions on this railway was finished.

On the Great Indian Peninsula line some greater difficulty was experienced in arriving at the final alignment.[1] The problem involved great engineering difficulties of a different nature, and Lord Dalhousie left no stone unturned before he gave his final sanction to the climbing of the Western Ghats by two routes. The two principal lines to the north and to the south bifurcated from

[1] *Supra*, Ch. I, p. 25.

Kalyan about 33 miles from the city, one proceeding to Bhusawal *via* the Thall Ghat and the other surmounting the Bhore incline to Poona and Raichur. From Bhusawal two lines ran, one proceeding towards Jubbalpore where it met the East Indian Railway, and the other to Nagpore whence in subsequent years the Bengal Nagpore Railway to Calcutta was constructed. On the south the line met the Madras Railway at Raichur.

The question of the terminus at Bombay was for a long time left unsettled, the military authorities having strongly opposed the proposal of the railway company to construct a terminus close to the fort and on the most convenient point of the harbour. Government at first sanctioned a temporary situation near Boree-Bunder, but as the accommodation was too small, the present site was determined upon at Elphinstone, on an extensive area reclaimed from the sea. Traffic has however exceeded all calculations and even lately (1928) further extensions and improvements in the terminal arrangements have been made.

The Bombay Baroda line presented much greater difficulties in construction than what the originators estimated. The nature of the country and the heavy floods on some of the big watercourses which this railway had to cross presented almost insuperable obstacles. More than twice constructions on the river Nerbudda were completely washed away, until a new system of sinking piers and making abutments designed by Colonel Kennedy saved the situation. By 1865 the whole line from Bombay to Ahmedabad was opened. The question of an independent approach to Bombay was decided after some discussion, and in 1870 a new terminus at Colaba was opened. Extensive alterations in the Bombay termini had been made from time to time to meet traffic requirements and the introduction of electric services has necessitated further alterations in recent years.

5

The Madras alignment as originally recommended was from Madras to Beypore on the western coast with branches to Bangalore and the Nilgiris, and also a line through Cuddapah and Bellary towards the Bombay line. By 1861 the entire south-west line was opened, and it was decided to carry it further up to Calicut, with a view to secure there a better port than Beypore. The route towards Bombay was altered, after more careful examination, to the present one *via* Gooty. Construction was comparatively easy in this Presidency, and fewer natural difficulties were encountered.

The nature and general alignments of the Scinde Punjab and Delhi, the Eastern Bengal, and the other railways have already been touched upon.

The three years 1869-1871 are outstanding in respect of some of the most memorable events in the history of communications with India. In 1869 the Suez Canal was opened bringing East and West into closer contact. In 1870 the Great Indian Peninsula and the East Indian Railway lines met at Jubbalpore effecting through running between Calcutta and Bombay. The weekly mail service between England and Bombay, established in 1867, was extended thereafter to Calcutta and up-country. The next year saw the meeting of the lines from Bombay and Madras at Raichur. The following table shows the progress of the respective lines in quinquennial periods from 1854 to 1868.[1]

[1] Juland Danvers' Administration Reports 1859-1869 (compiled).

Railway.	First-Year of sanction and contract.	Date of opening of 1st Section.	No. of miles opened at the end of: 1858	1863	1868	Miles sanctioned and under construction at the end of 1868.
Great Indian Peninsula.	1849	18-4-53	194	553	875	400
East Indian ...	1849	15-8-54	141	937	1353	147
Madras ...	1852	1-7-56	95	447	678	185
Bombay Baroda and Central India.	1855	10-2-60	...	185	305	78
Scinde Punjab and Delhi.	1855	13-5-61 / 10-4-62	.	150	408	266
Eastern Bengal ...	1858	29-9-62	.	110	114	45
Great Southern of India.	1858	15-7-61	...	79	168	210
Calcutta and South Eastern.	1859	2-1-62	...	28	28	...
Oudh[1] ...	1862	21-12-63	..	27	69	630
Carnatic[2]	1864	8-5-65	...	..	19	80
Total ...	...	...	430	2,156	4,017	2,041

In fifteen years more than four thousand miles were opened and another two thousand were under construction at the end of the period. The average annual addition works out as 267·8 miles. The lowest addition was 15·5 miles in 1857 and the highest 770 miles in the year 1862. Broadly speaking the average number of miles opened up to 1860 was 120 per annum, after which the annual average was about 400.

1 Originally Indian Tramway Company that constructed the Arconum Line.

2 Originally Indian Branch Railway Company that constructed Nalhati branch.

III. *Parliamentary Committee of 1858*

The progress of railway construction in the earlier years was far from satisfactory. The mutiny of 1857 proved the urgent need of more rapid development, and the following year Parliament appointed a select committee to enquire into the causes of delay. These were found to be those due to Government supervision, political disturbances such as insurrection and mutiny, natural difficulties which the face of the country presented, and the novel undertaking of extensive public works in a country far away from the source of supplies. The Companies complained of vexatious interference by inexperienced Government engineers, but the Committee did not consider that as a material source of delay. The main impediments to progress consisted, in their opinion, in the necessity of transporting materials from England, the difficulties of conveying them to their destination when they reached India, the failure of contractors unaccustomed to such work, and the circuitous and lengthy correspondence between the Boards of the railway companies in London and their agents on the one hand, and the various Government departments both in India and in England on the other. On the whole, however, the development of lines in India bore favourable comparison with the progress of railway construction in England. The Committee recommended certain simplification of the arrangements, by a "judicious adherence to the spirit rather than the letter of the contract," with a view to securing united action for one common object.[1] This report had an immediate and beneficial effect, and construction was pushed with unprecedented vigour for the next few years.

[1] Report of the Parliamentary Committee 1858, and Juland Danvers' Administration Report 1859, p. 8.

Some of these obstacles to progress existed even when the Acworth Committee reported in 1921 on the administration of Indian railways.

IV. Nature of Construction and Standard Dimensions

In India, owing to the generally level character of the country, the permanent way is carried for the most part on embankments of moderate height with adequate openings for water, and with cuttings and tunnels on rare occasions. The comparative absence of busy cross-country roads permitted the lines to proceed with very few over- or under-bridges, so common on English railways. On some lines masonry and brickwork had to be extensively resorted to, particularly in Bengal, to afford adequate protection against floods. Foundations for bridges had to be sunk through sand of great and unknown depth, and bridges of extraordinary span and length had to be constructed. On the Great Indian Peninsula Railway, however, admirable building stone and ballast were found in abundance, but the work was none the less laborious because of the hard rock, difficult inclines, and mountain precipices. The lines were mostly well-ballasted with stone and with sand as well where cast iron sleepers were used. The use of iron in the construction in the beginning was probably more largely resorted to than in other countries. This was due to the difficulty of procuring seasoned hard-wood sleepers in sufficient quantity. The surface of the country presented much less natural difficulties in Madras than in other parts and construction there was carried on more cheaply and expeditiously. On other lines the opening of different sections generally depended on the completion of bridges or tunnels demarcating each portion. Engineering operations encountered a variety of difficulties in different parts of the country.

The method adopted for carrying on the construction differed in different places. A system of large contracts given to some English firms of wealth and standing was employed in Bombay, while the East Indian Railway parcelled the line out to small contractors, substituting departmental construction where they failed and the more successful contractors could not be entrusted with the additional work. In Madras direct execution by the Companies' engineers was preferred. The Eastern Bengal Railway followed the example of Bombay.

Experience proved that the Bombay system, though not very satisfactory as to the character of the work done, possessed the advantage of quick working and facilities for due supervision under the terms of the contract. The system of decentralised constructions by divisions adopted by the East Indian Railway, was, inspite of partial failure at places, the only practical mode of undertaking work simultaneously over a very large area. The Madras system was undoubtedly the safest and most economical, but the characteristic differences of the conditions make comparisons with the other two methods difficult.

As a rule, all these railways were constructed, in the first instance, for a single line of rails,—bridges, cuttings and tunnels being made suitable for double lines. By 1869 however, nearly 475 miles of double tracks had been constructed in order to cope with increased traffic. The recognised standard gauge was 5 ft. 6 in. and uniformity in dimensions had been largely secured. It was on two short sections of branch lines that a break of gauge was permitted experimentally, with a view to secure more economical construction, but nobody conceived as yet that this would be extended.

Standard dimensions of roadway and rolling stock had been definitely fixed, as early as 1856, by the consulting engineers of the railway companies, with the approval of

Government, and these were rigidly adhered to. India gained through the unhappy experiences of other countries, and the benefits accruing from this early decision cannot too much be emphasised. Some of the principal dimensions then determined may be of interest. These were :[1]

Minimum clear width between two tracks ...	6 ft.
Minimum distance of Platform wall from rail	2 ft. 6 in.
Minimum clear height for all openings above rail, in centre	14 ft. 6 in.
Extreme width of body of coaches	8 ft. 6 in.
Maximum length between centre of wheels...	11 ft.

In later years these dimensions have been reviewed and separate standards have been fixed for railways of smaller gauges. It may be noted that the loading gauge in India has never been sufficiently liberal in proportion to the wide standard gauge for the railway, and much of the potential capacity of the line has therefore been left neglected.

V. Government Supervision and Control

From the very beginning the Government of India as well as the Court of Directors thought it essential to retain in their hands the fullest powers of control over all the proceedings and operations in connexion with railways in India. Lord Dalhousie held the view that the railways were national works, over which the Government might justly exercise a stringent and salutary control, " at once for the interests of the state and for the protection of the public."[2] Provision was accordingly made in the contract for supervision, in India as well as in England.

MacGeorge, Ways and Works in India 1894, Chapter VII.
Dalhousie's Minute, dated the 4th July 1850.

In England an official Director with a power of veto on all proceedings was appointed to join the Board of Directors of all the railway companies. In a few years extensive authority was vested in him for sanctioning all indents and purchases. All matters of importance, particularly those involving financial policy, had to be referred to the Secretary of State for India since 1858, when the administration of the country was transferred to the Crown.

In India, prior to 1854, public works of all description were carried on by the Engineer Department of the Army, under the superintendence of a Military Board in each of the three Presidencies. The nature of the undertaking, Military or Civil, controlled the allocation of financial responsibility on the two branches of Government. Lord Dalhousie abolished the Military Boards in 1854 and established a Central Public Works Secretariat at Calcutta. Under each Local Government a chief engineer was appointed to administer all public works locally. As the work of the Central Public Works Department grew in course of time, the railway branch under a Special Deputy Secretary was formed in 1866.[1]

The supervision of railways was at first exercised by the Central Government and a consulting engineer for guaranteed railways was appointed for the purpose. For a few years, in the very beginning, the name of the highest controlling office was 'Director of Indian Railways,' but as this was likely to lead to some confusion with the Government Director of Railways in England the new name of Consulting Engineer was substituted.

Shortly afterwards the necessity for experts with local knowledge working in close touch with various branches of local governments was felt and provincial consulting engineers were appointed. Some guiding rules were laid down

[1] Report of the Select Committee on East India Public Works 1878-79, pp. iii and iv.

in order to ensure uniformity of control and smooth working. All questions of detail and routine work were left to the provincial consulting engineers themselves, while problems of general importance.—alignment, position, and arrangements of the more important stations and works—had to be referred to the Government. The provincial engineers had to inspect every line before opening for passenger traffic, and had to carry on periodical examination of all works and construction. They also exercised special powers to enquire into all cases of accident or injury, or matters relating to the safety of the line, convenience of the public, and the well-being of the staff. As each railway began to extend over two or more provinces it was considered desirable to keep the control of each company under one consulting engineer, irrespective of the territories their lines covered. This general arrangement of Government supervision, with slight modifications from time to time as experience necessitated, went on till the introduction of state railways in the country.

VI. *Railway Legislation*

The Government bound itself under the first terms of contract to promote such legislation in India as might be necessary to enable the companies to fulfil the objects of their undertaking. The first enactment that was accordingly made was one of 1854 which was applicable to railways in British territory only. It gave legal sanction to certain regulations, modelled on those of the British railways, regarding pre-payment of fares, production of tickets, fraudulent attempts, trespass, obstruction, handling of luggage, etc., and the liability of the railways in the carriage of traffic. The question of fencing and some other minor matters were also covered by the Act. In various respects

the Act was inadequate and defective, particularly in the omission to provide for safety in working and protection of the public against undue preference. The Government of India soon realised some of these shortcomings and tried to cure them, from time to time, by the issue of official resolutions.[1] In 1867 a short Act was passed defining the liabilities of railway servants, and rendering penal certain offences committed by them. At about this time the applicability of the Act of 1854 to all description of railways, including tramways worked by steam, within or without British territory, was proposed. The Government contemplated drawing up a comprehensive enactment instead of having a number of fragmentary Acts. The Secretary of State agreed thereto, and after consultation with provincial governments a draft bill was prepared in 1868. In the following year the bill after certain modifications was published for opinion. A new difficulty was now raised. The competency of the Government to encroach upon the rights of the companies by any new legislation was questioned. The agitation was so great that nothing could be done in the nature of comprehensive legislation for the next few years. In 1870 and 1871 two short Acts were passed to meet certain urgent questions including the control and reporting of accidents and cattle trespass. Meanwhile, Government decided upon State-construction of railways, and in view of the new policy it was resolved to keep the question of further legislation in abeyance. The Government of India observed that "the law of the land relating to railways should be the same, to whomsoever such railways may belong,"[2] and therefore, as a matter of policy

[1] Government of India Public Works Department Letters No. 836-39 of 3rd March 1862. Resolutions 704-14, Railway, of 19th August 1865. (Bell, Railway Policy, Ch. VI.)

[2] Government of India Resolution No. 407, Railway, of 12th March 1871. Also Bell, Railway Policy in India, Ch. VI.

it could not venture on general legislation for the control of all railways unless it had some experience of State railways.

VII. General Results : Financial, Working, and Traffic

Within a few years of the opening of the railways, their superiority over other means of transport began to be appreciated. Passengers and goods responded remarkably, and the apprehensions of those that raised an alarm in the beginning were largely dispelled. The Indian proved an "inveterate traveller," contrary to the estimate of the Court of Directors, and provided the travel was cheap he undertook journeys from which many Europeans would shrink. In the first five years passenger journeys increased fivefold from about 535,000 to more than 2,700,000, and this rate of progress was kept up for another five years. Between 1864 and 1869 these rose from 11¾ millions to 16 millions. An even more remarkable advance was noticed in freight traffic, where from a nominal amount of 23 tons in 1853-54 the tonnage increased to nearly 200,000 in 1859 and to more than 12 million in 1869. The gross earnings per mile per week rose during these fifteen years from Rs. 63 only to more than Rs. 277. The percentage of freight income to the total steadily advanced from a nominal amount of 4 per cent in 1853-54 to nearly 66 per cent in 1869.

The financial results to the State, however, were far from encouraging. The capital costs in this first period were extremely heavy and the net earnings brought only 0·22, 1·3, 1·98 and 3 per cent on the total outlay during the years 1854, 1859, 1864 and 1869 respectively.[1] The

[1] Administration Report 1903, Appendix 10.

State was therefore called upon to pay larger amounts annually on account of guaranteed interest. "The total capital spent up to 1868 was about £78 millions. In the first five years including 1854 the aggregate outlay was £3⅛ millions, and since then the average had been five millions yearly."[1] Of the above sums about 40 per cent was spent in England. The aggregate net receipts in 15 years were about £12 millions, and the gross payments for interest amounted to £25½ millions, leaving a net charge on the Government of about £13½ millions. More than a million and a half sterling had to be paid out of revenues in one year in 1863. And this was not all. The State had to spend further sums on the purchase and acquisition of land, on surveys, and on supervision. Considerable loss was also sustained on account of the rise in the rate of exchange. The contract rate with the early companies was fixed at 1 *s*. 10 *d*. to the rupee, and as the rate throughout this period had constantly kept on the rise Government lost heavily for every amount received in England. Writing in 1867 Captain E. C. S. Williams pointed out that while Government control cost about £100, and land about £500, the loss on exchange amounted to about £940 for every mile opened.[2] The total loss on this account alone up to 1868-69 was £3·6 million.[3]

It was hoped that when the exchanges would fall, as they showed a tendency after 1870, the Government would probably make good these losses. But the course of events proved otherwise. When the exchanges grew favourable the flow of money reversed the direction, the old investments in the meantime being in a position to earn dividends and new capital outlay gradually becoming less

Lawrence's Minute, dated 9th January 1869.
Note by Capt. E. C.S. Williams, dated 16th July 1867.
Report of the Select Committee on East India Communications 1884, p. 706.

and less as the lines were completed. Thus the State was unfortunately left to bear the burden of loss on both ways.

This was however inevitable, because, Indian capital was shy and English money had to be brought down at all costs for the railways. Of the total capital of more than £86 million raised up to 1869 less than one per cent was subscribed in India.[1]

It was only in one half year in 1865-66 that the amount of railway earnings exceeded the amount paid for guaranteed interest by a small sum, but this gain was more than offset by the cost of land and supervision and the loss in exchange. The net receipts of the Great Indian Peninsula, and the East Indian Railways exceeded for the first time the five per cent guaranteed minimum in the first half of 1866, enabling these companies to declare an additional dividend to their shareholders.

The cost of construction of the lines was originally estimated at £15,000 per mile for double, and £9,000 per mile for single lines. It was discovered however that the great trunk lines had cost no less than £20,000 per mile for about three thousand miles.[2] The physical difficulties of the country, the disturbances due to the Mutiny of 1857 and other commotions, the difficulty of procuring sleepers, the high rates of salaries and wages paid to European superintendents and artisans, the floods and cyclones that often carried away large portions of finished work, and the alterations in routes were amongst the principal causes of enhancement of costs. In spite of these factors the average cost of Indian railways bore a favourable

[1] Administration Report 1869-70, pp. 14 and 15.

[2] Administration Report on Indian Railways 1870-71 and 1872-73. Sir Arthu Cotton in a paper read before the East Indian Association on 14th December 1869 stated the cost per mile as £25,000. The Rt. Hon'ble William Massey told in evidence before the Parliamentary Committee of 1872 that the E. I. R. had cost £30,00C per mile.

comparison to that of other countries. This was primarily due to the availability of cheap labour, and a comparative absence of expenses on land and on parliamentary or legal matters.[1]

The nature and condition of construction of the different lines were not the same and it must be pointed out here that the costs varied widely from one railway to another, if not from one part of the same line to a different section. Thus while the East Indian Railway figures were as high as £25,000 per mile, the Madras Railway managed with £12,000 only and the Great Southern of India with about £8,000 only per mile. The East Indian Railway works were, however, of a more substantial character in general, and have proved ultimately economical and beneficial, in view of an ever rapidly increasing traffic.

The following table shows the Financial, Traffic, and working results in general, every fifth year from 1854 to 1869. The figures quoted are merely approximate for no high degree of statistical accuracy was attained in the earlier years. Moreover, the constant fluctuations in the exchanges, the change in the period of computation either on the basis of financial years, calendar years, or other convenient periods of returns, and variations in the compilation of annual Administration Report make a more accurate statistical comparison impossible. It is hoped however that for all practical purposes the statement will be useful.

[1] Administration Report 1859.

[1] £1=Rs. 10 at the time.

Miles Open		1854	1859	1864	1869
		71	625	2,958	4,255
Total Capital Outlay...	Rs. '000s	4,00,00	22,50,00	58,00,00	89,00,00
Gross Earnings ...	,, ,,	231	5,724	28,590	61,310
Net Earnings ...	,, ,,	89	2,950	11,504	27,136
Percentage of Net Earnings to Capital Outlay		0·22	1·31	1·98	3·05
Total Loss to State for Interest, Exchange, Land, etc., up to the end of financial year ...	,, ,,	27,75	3,27,43	12,36,55	19,54,90[2]
Gross Earnings per mile per week. ...	,, ,,	63	176	186	277
Percentage of Coaching to Total Income (Financial year)		95·8	44	41	33
Percentage of Goods Income to total (Financial year) ...		4·2	56	59	66
Passenger Journeys (Financial year). ...	'000s	535	2,722	11,782	16,012
Percentage of Third Class Passengers to total		88	92·6	94	95·23
Freight carried (Financial year) ...	Tons	23	195,431	..	2,588,513
Train Miles run ...	'000s	...	...	10,121[3]	12,318
Operating Ratio ...		61·47	48·46	59·76	55·74

It should be emphasized that the general results shown above varied considerably from one line to another. The East Indian and the Great Indian Peninsula Railways were no longer unremunerative by themselves, although the Scinde, Bombay and Baroda, and Madras lines were highly

[1] Compiled from Administration Report 1859, 1864, 1869 and compared with 1903.

[2] Compiled from Report of Parliamentary Select Committee 1884, p. 706 etc,

[3] In 1865-66.

disappointing. The operating ratio on the different lines was widely different as between 78·57% on the Scinde Railway to only 34·66% on the north-west section of the Madras Railway. That large receipts produce little benefits unless attended with a moderate scale of expenditure was shown by the example of Bombay and Baroda, and Scinde companies. The following table showing the receipts and expenses per train-mile for some of the important lines in the year 1868-69 is illustrative :

Receipts and Expenses per Train-mile for the Year 1868-69 [1]

Railway.	Gross Receipts.	Total Expenses.	Net receipts.	Locomotive Expenses.
	Shillings.	Shillings.	Shillings.	Pence.
E. I. R. (Main Line)	8·8	3·5	5·3	15·7
G. I. P. Railway	10·2	6·5	3·7	28·4
Madras (North-West Line)	8·4	3·2	5·2	13·5
B. B. and C. I. Railway	12·5	8·7	3·8	31·7
Scinde Railway	15·1	10·3	4·8	42·1
Punjab Railway	6·1	5·4	0·7	21·5
E. B. Railway	9·2	4·4	4·8	15

The greatest contrasts in the operating costs were in maintenance and locomotive expenses. In the former while the E. I. Railway incurred only 7·4 *d.* per train-mile in 1868-69, the G. I. P. and B. B. C. I. required three times as much and the Scinde Railway four times. The locomotive running charges as shown in the table above varied so widely on account of the availability or otherwise of coal

[1] Administration Report 1869-70, p. 31.

and other fuel for the engines. The coal-fields of Bengal have from the beginning afforded distinct advantages to the East Indian and Eastern Bengal Railways over other lines.

VIII. *Rates and Fares*

The development of rates and fares on Indian railways during the early fifteen years may now be traced. On account of the responsibility that the State assumed for the railways in the country, the Government naturally retained the control of rates and fares in its hands from the very beginning. But the intimate concern in the financial success of the lines, and the absence of any data made the Government hesitate for some years before it thought fit to interfere.

On the opening of the first lines the Court of Directors advised that rates and fares might be fixed experimentally for one year. It was then believed that little was to be expected from passengers. Conveyance of oilseeds and food-grains to a certain extent and a heavy traffic in cotton towards the ports for purposes of export were particularly counted upon. The first rates were determined accordingly with a view to draw the country's raw products to the ports. The goods classification was simple and did not exceed a page of foolscap in print. Provision was made for three classes of passengers and five classes of goods (merchandise). A special rate was quoted for coal by the East Indian Railway.

The first few years were years of experiment and although Government did not interfere with the action of the companies substantial modifications were made between 1856 and 1859. In the latter year the attitude of Government was described as " influenced by the two-fold desire to produce as remunerative a traffic as possible, and to confer as much convenience and benefit upon the population of the country, and as many facilities for its trade,

as are compatible with the extent of profits contemplated in the clause of the contracts relating to the question of fares." [1]

In 1856-57 Colonel Pears drew the attention of the Government to the need for lowering fares and rates in Madras and strongly controverted the arguments of the railway companies who were trying to raise the charges. It was shown that compared to England where a labourer could travel 18 miles for a day's wages an Indian labourer could hardly travel four miles with a day's earnings. The accommodation again was much less comfortable. The framing of charges on an analogy with England was strongly condemned, for, while Great Britain was characterised by industry, wealth, intelligence and energy of the highest order, India was just emerging out of disorder and depression. The main object of the Government in introducing railways was, in the opinion of Colonel Pears, to provide better and cheaper transit for the country, and it was rash to expect high profits from them from the beginning. It was contended that the main reason for the disappointing traffic on the lines in the South was that the charges were not sufficiently low to attract traffic to the rail. The Government of Madras and the Court of Directors fully agreed with these views, and the Government for the first time declared its policy, stating that, " the railway should be made available, to the utmost possible extent, for the mass of the people," consistent with their profitable and economical working. The Government thenceforward took a keener interest in the rates and fares and began to exercise its power of control. In 1859 some dispute arose as to the authority of Government to alter rates, and the Secretary of State decided that when once these had been definitely settled all proposals for alterations must be initiated by the

[1] Juland Danvers' Report 1859, p. 41.

railway companies, until the profits realised amounted to more than 10 per cent.[1]

In 1861-62 the matter was further discussed and it was decided that the Government, instead of fixing the actual rates and fares to be charged would approve of a scale of maximum rates, leaving it to the companies' officers, in consultation with the Government consulting engineer to impose such actual rates, within the maximum, as might be suited to each case. Mr. Juland Danvers observed that the two great objects should be to develop the traffic and to reduce working expenses. It was demonstrated that the people of India were similar to the people of every country in their disposition to travel, and the numbers using the rail were in proportion to the inducements offered.[2]

A distinct difference in the attitude of the Government from that of the railway companies was then noticeable. While it was undoubtedly in the interest of both parties to make the railways profitable, the Government desired this to be achieved by spreading railway benefits over the greatest number. The companies on the other hand aimed at the result with the minimum of carriage and effort, conveying a small volume of high-class traffic at high rates.[3] It was pointed out in 1863-64 that in some cases receipts had increased although traffic had diminished. It was possible that the rates were too high and more traffic might have been taken, at a less profit per unit, producing greater aggregate profits. It was not high profits upon the unit but small profits upon large numbers or quantity that should be sought for.

In 1865, through the persistent efforts of the Government Director of Indian Railway companies, the principle of

Despatch No. 119, dated 24th November 1859.
Danvers' Report 1861-62, p. 22.
" " 1863-64, p. 14.

fixing maximum rates was adopted. It was first introduced on the Bombay line and was gradually extended to others by the different Provincial Governments. A new feature now developed. The demand for conveyance grew so great by the following year that the resources of the railways proved inadequate to meet it fully. Some agitation was at the same time carried on in England against the interference of Government, which was alleged to be detrimental to the interest of the State as guarantor of interest on the capital spent. The Secretary of State, however, took up a wise and firm attitude.[1] He was determined not to allow the burden of guarantee press too heavily upon the users of the rail. Maxima charges were accordingly fixed by local governments in consultation with the Secretary of State, leaving sufficient scope for the companies to exercise their discretion.

The Government of India wanted more powers in its hands and could not see eye to eye with the Secretary of State. It was particularly solicitous for maintaining a uniformly low rate for lowest class passengers and foodgrains "as a part of its duty to protect the interests of the people."[2] A period of divergent views between the Secretary of State and the Government of India then followed in which the latter consistently emphasised the need for protecting the masses.

The existing fares on all open lines were fixed as the maxima and ultimately the Central Government was allowed the power of fixing charges for the lowest-class passengers, foodgrains, and coal.[3] On all future lines the lowest-class fare was not to exceed two pies per mile per passenger, and the maximum rate for the conveyance of foodgrains and coal was to be ·25 pie per maund[4] per mile. The

[1] Despatch No. 26, dated 8th February 1867.

[2] Government of India Circular No. 10 Ry. of 16th Oct. 1867.

[3] Despatch No. 17 of 29th February 1868.

[4] 1 maund is equal to 82 lbs.

policy of encouraging low rates for the staples of the country gained a further impetus from a successful arrangement made in 1868 for the conveyance of grain at a specially reduced rate of ·125 pie per maund per mile ($\frac{1}{2}$ *d.* per ton-mile) to certain famine-stricken parts of the country.[1] Experiments in offering a fourth class accommodation for passengers at very cheap fares on certain lines had also proved encouraging.

In 1869, however, the Secretary of State compelled the Government of India to sanction an enhancement of the maxima for the Madras Railway, and himself raised the lowest rates on the Oudh and Rohilkhund Railway, ignoring the considered opinion of the administrators on the spot. Lord Mayo's Government regarded this as a "blind policy,"[2] both from a financial standpoint as well as for the well-being and prosperity of the country.[3] Subsequent events proved the wisdom of the Government of India. Heavy losses were entailed upon the people on account of this short-sighted policy insisted upon by the Secretary of State, and the inadequate provision of railway mileage in India during the first decade or two of railway operation is believed to have been largely accountable to these losses.[4] The opinion of the Government of India was supported by the investigations of Mr. A. M. Rendel, the able consulting engineer of the East Indian Railway. Following upon a great depression in traffic receipts and an alarming drain on capital he was sent out to India in 1868 to personally examine the situation and investigate the problem. Mr. Rendel discovered that the expenditure during the last few years had been largely in excess of traffic requirements, and

1 Juland Danvers' Report 1869-70, p. 24.

2 Evidence of Major Conway-Gordon before the Parliamentary Select Committee of 1884, para. 4317.

3 Letter No. 118 Ry. of 24th November 1869.

4 *Op. cit.* Conway-Gordon, paras. 442-49.

the mileage of rolling stock was out of proportion to the work done. A lowering of third class passenger fares from 3 to 2½ pies per mile, the adoption of mixed trains, and an effective collection of statistics of operation with a view to check wastage were recommended by him. The results were remarkably successful. Four years later he observed that the failure of traffic to rise up to expectations was due to the heavy rates. The rate charged on Indian Railways per mile might not seem large, but the low value of the commodities coupled with the long distance they were conveyed laid an intolerable burden on their prime cost. With judicious management the cost of transport might be reduced to an average on all lines of about one-third of a penny per ton per mile, and then a charge not much exceeding half of the then existing rates would be sufficient. This would certainly mean a very large increase in the traffic.[1]

Below are given the rates and fares originally introduced and those in force in 1859 and 1869 respectively for the important lines :

[1] Juland Danvers' Report 1871-72, p. 41, Appendix.

Rates and Fares in Pies only, 1 pie = $\frac{1}{8}$ of a penny, assuming Re. 1 = 2 Shillings.

Railway.		Per passenger per mile.[1]			Goods per ton per mile.[2]						
		1st Class.	2nd Class.	3rd Class.	1st Class.	2nd Class.	3rd Class.	4th Class.	5th Class.	6th Class.	Special Class.
E. I. Ry.	1854	24	9	3	9	13·5	18	27	...	54	7 for coal
,,	1859	18	9	3	9	13·5	18	27	...	54	...
,,	1869	18	9	3	8	14	18	22	28	...	7 for long distances.
G. I. P. Ry.	1853	24	10	3	10	14	18	20	30	...	...
,,	1859	18	6	3	10	14	18	22	30	...	...
,,	1869	18	9	2·5	8	10	14	15	24	56	...
Madras	1856	18	9	4	6·75	13·5	20·25	...	...	..	...
,,	1859	18	6	2	8	10	12	...	...	...	...
,,	1869	18	6	3	8	12	14	18	24	48	...
B. B. Ry.	1865	14·4	8	4	8	10	16	20	...	...	...
,,	1869	15	7	3	8	10	14	20	28	40	...
E. B. Ry.	1869	18	9	3	8	14	18	...	28	56	6
O. R. Ry,	1869	18	9	3	10	14	18	...	28	56	7

The whole of this section is based principally on: Mehta, Indian Railways, Rates and Regulations, Ch. IV, S. C. Ghosh, Monograph on Indian Railway Rates, Ch. I, and Juland Danvers, Administration Reports.

[1] Some railways had four classes in 1869 but to keep in line with the fares on other lines only the lowest class fares are given above for third class.

[2] The number and nature of goods classification on different railways and in different periods were different. Hence the rates quoted above are arranged as far as possible to show comparative scales irrespective of class denomination.

IX. Miscellaneous Problems

The question of providing adequate feeder roads to supplement the efforts of the railways towards securing easy transport soon became important. The plan of carrying lines at some distance from large towns and markets and not through the heart of cities and business places had found favour with railway engineers, partly on consideration of costs and partly from apprehension of accidents. Stations in India have been constructed often two or four miles away from the busiest parts of the towns they are meant to serve. This has made the problem of approaches and feeder roads all the more difficult, and it has added permanently to the cost of all classes of transport in India. Adequate approach roads have not been constructed in many parts of the country even yet, and the consequences of this may become increasingly serious in future with the growth of road motor transportation.

In the period under review the nature of the country was so impassable in some parts that goods and passengers could approach the railways only during about five months of the year. Attention was drawn to this at an early date and in 1860 the Secretary of State advised the Government of India to promote speedy construction of feeder roads. A special tax for road maintenance, called the road-cess had been levied thereafter, but in spite of this very little progress was made.

For some years after the opening of through lines great difficulties were felt on account of the existence of various transit duties between different provinces and also between them and the Indian States. Trains had often to be stopped *en route* for examination and detection of dutiable goods. In 1866-67 the need for a speedy cure of this evil was emphasized, and shortly afterwards arrangements were made for the collection of all duties at the station of origin. At

about the same time a uniform system of weights based upon one standard maund,[1] equal to 82 lbs. of English measure, was adopted on all the railways of India.

The question of accidents to passengers, servants, and live-stock was closely attended to by the Government of India from the very beginning. Elaborate statistics were kept of all fatalities and serious injuries. In 1869 thirty-one persons or 1·87 per million carried were killed and 4·78 per million carried were injured from causes beyond their own control. Besides these 17 were killed and 13 injured through their own fault, 109 railway servants met with fatal accidents in course of their work, and 48 trespassers were run over.[2] Considering the conditions of the country and the age of the railways these cannot be regarded as appalling, but the arrangements for travelling were horrible, particularly for the lowest-class passengers. An idea of these can be had from the fact that in one half-year, in 1867, not less than 132 passengers were found either dead or dying in the trains. The most common causes ascribed for these deaths were cholera and heat-stroke.

In the beginning, the railways, in many parts, were not properly fenced, and in some years the number of cattle and live-stock run over was considerable. Two short Acts of 1870 and 1871, were particularly directed towards better control of accidents and cattle trespass.

Soon after the opening of the lines the necessity for a thorough system of audit and accounts was felt. The Government Examiner of Accounts then controlled all expenses from an audit point of view. In 1860-61 a more efficient system of audit, especially for the East Indian Railway was discussed, and after some experiments an improved plan was introduced in 1866-67. Great difficulty was

[1] 1 Maund = 40 seers = 82 lbs., one seer is rather a little less than a kilogramme.
[2] Juland Danvers' Report, 1869-70.

experienced in checking the capital expenditure of the companies, and in 1864 the Secretary of State laid down, after some dispute, certain principles for determining charges to Capital and Revenue Accounts of the companies.[1]

Various questions of efficient operation and working referring to staff, fuel, lubrication, design of coaches and wagons, speed, and load, etc., had also been raised from time to time. The most noteworthy event in this connection was the personal visit of Mr. A. M. Rendel in 1868, referred to above.[2] At his suggestion large economies were effected, and following the American plan, a careful collection of statistics of operation was undertaken by the East Indian Railway. In course of time the example of the East Indian Railway was followed by other lines, and the working costs of each company per train, per train-mile, per unit of traffic, etc., were calculated and compared. The system of statistics and their calculation was far from satisfactory, but on the whole it helped the administration immensely. In subsequent years it was claimed that the East Indian Railway was the most economically worked line in the whole world.[3]

A few words must be said about the persons employed. It was Lord Dalhousie's policy to encourage the employment of European energy along with English capital. Expert and efficient Indian labour was also naturally wanting. In 1870, although of the total persons employed nearly 90 per cent were Indians, there was not one of them in the superior posts. The cost of working with highly paid European Superintendents and mechanics was enormous. In 1869-70 the Director of Railways reported: "One of the

[1] Secretary of State's Despatch, dated 9th March 1864.

[2] *Supra*, p. 51.

[3] Danvers on "Progress of Railways and Trade in India." Journal of Royal Society of Arts, Vol. 37, April 5, 1889.

chief expenses connected with the working of railways in India is the high cost of European agency. While in England the maximum pay of a driver is £150 a year, in India it has reached £480. The actual charge in India of skilled labour, taking into account passages, furlough pay, sickness, and intemperance of the European mechanics was more than three times that in England."[1]

The training and employment of Indians engaged the attention of the Government and the railway companies as early as 1860-61, but unfortunately Indians were not thought fit to undertake the work of mechanics and engine-drivers. The training of Europeans and East Indians[2] for those employments was thereupon started locally. As a result some departments of the railway service, specially those that were highly paid, remained closed to the children of the soil. This had grown to be the greatest grievance of the Indians against the railways. It may be noted, however, that during recent years, this complaint has received much considerate attention.

Very remarkable were the political and economic effects brought about in this period by the railways. Lord Dalhousie's dreams had been realised. The net-work of easy communication converted India from a mere geographical expression to a well-knit and consolidated political unit. The efficiency of the army and of the civil administration increased immensely, and the Government could follow a policy of public works and reconstruction rather than that of war and annexation of the early nineteenth century.

In the domain of trade, commerce, and industry the effect was still more remarkable. With the growth of railways an abundant store of wealth, which remained only partially developed in the past, at once made itself available. Between 1848 and 1856 the export of raw cotton doubled and the imports of merchandise increased more than

[1] J. Danvers' Report, 1869-70. [2] Anglo-Indians.

two and a half times, imports of cotton twists and yarns alone rising from £3 millions to nearly £6⅛ millions. By 1868 all the important cotton-producing districts had been opened up and one of the primary commercial demands for speedy construction of Indian railways was met. Between 1851-52 and 1868-69 the total imports and exports of British India trebled. The progress was accelerated by the opening of the Suez Canal. In the meantime the Industrial Revolution in England had brought about a complete reversal in the course of India's foreign trade. Bulky raw produce such as cotton, food-grains, and oilseeds took the place of artistic and partly manufactured products of the previous century in the exports of the country. Increased demand for raw produce caused an extension in the area of cultivation and for the first time agriculture began to take to specialisation in particular crops in certain areas. The need for a more thorough use of the facilities offered by the railways led to the opening of numerous pressing, baling, cleaning, and packing factories for cotton in various centres; but on the whole, India became pre-eminently an agricultural country as her old industries gradually dwindled away.

The economic self-sufficiency of particular areas with their cottage industries and limited demand and supply met with a rude shock. The whole economic life was revolutionised, and the impact was probably too much for the quite unprepared people of India. Prices and wages rose but the latter could never keep pace with the rise in the prices of necessaries. Immobility of labour and acute serfdom were partially broken and a sense of dignity in employment was brought home to railway workers. On the other hand the export of surplus food of the country diminished the reserves for times of scarcity, and some people suffered more terribly from famines than in previous years. The railway's ability to carry food to affected parts from those that could spare could not be relied

on, and the abandonment of the old form of insurance through storage of grains led to severe hardships.

It has further been complained that the evils due to the abnormal and sudden growth of imports were no less serious. They engrafted on the simple needs of the peasant cheap commodities of luxury so profusely that their habit of expenditure was increased beyond all capacity of earning. The village artisan, driven out of work by the inflow of foreign goods, found no other alternative than to fall back on land. Thousands and millions gradually discovered their employment gone, but, for want of education and organisation, never knew why their work had stopped. No preparations were made in the country to meet the sudden economic transformation that the railways were sure to bring about, and the immense benefits that the railways might otherwise have conferred on the masses of India, were largely set at nought. The Government was over-zealous in pushing forward the extension of lines and failed to observe how far the people could keep pace with the advanced conditions created by the railways.[1]

There was, however, a silver lining to the cloud. The stationary state of India had ceased. With a rise in prices and wages the standard of living of some of the people gradually advanced. The acute conservatism and barriers of caste and prejudices were being removed and broken down. Social relationships between persons living widely apart multiplied, and parents had no longer much hesitation in marrying their children at distant places.[2] Many persons began to undertake long journeys, particularly in connection with trade and pilgrimage, and the exchange of

[1] R. C. Dutt, India in the Victorian Age, Ch. IX, and A. K. Connell, Economic Revolution of India, 1883, pp 53-57.

[2] Juland Danvers' Report, 1867-68.

their views, habits, and thoughts brought about a sense of national cohesion and unity. This may be regarded as the greatest boon that the railways have conferred upon the people of India.

CHAPTER III

STATE CONSTRUCTION AND ADMINISTRATION 1869-1882

(*Policy, Finances, Gauge, Law, and Rates*)

I. Discredit of the Guarantee System

The defects of the guarantee system as put in operation in India soon manifested themselves. Early in 1853 Lord Dalhousie had pointed out the need for very strict control over the conditions under which guarantees could be undertaken by the State. It was hoped that the inducement to economy and exertion would be secured by a close and vigilant watch on the proceedings of the Companies, tactfully exercised by the officers of the Government, without giving any just cause of complaint.[1] Elaborate suggestions had also been made by Mr. Simms for ensuring economy and completion of work within specified periods of time.

The contracts entered into were not however very carefully worded. In fact, while one clause stipulated the payment of guaranteed interest only on sums properly spent, a subsequent clause provided a payment by the State of a 5 per cent dividend on all capital raised by the companies. In actual practice Government control and supervision failed to check the tendency to extravagance. The Government consulting engineers were not experienced enough in railway construction and the fear of causing delay to the progress of work often led them to overlook the negligence of the companies. The only check offered to unrestricted expenditure was the expectation of an eventual share of the

[1] Dalhousie's Minute, dated the 20th April 1853.

surplus profits over the guaranteed interest. This possibility seemed too remote and did not serve to ensure economy.

When the guarantee system was sanctioned the Board of Control intended to adopt it only as a temporary measure to help the pioneer undertakings. It was soon discovered, however, that no capital was forthcoming without it, and the system could not be done away with.

In 1858 Lord Canning grew alarmed at the carelessness of the companies in the management of capital, and objected to the working of the guarantee system. He suggested that in any future contracts involving a guarantee by the State an essential element should be a scrutiny and careful examination of the estimate beforehand, and that the State should limit the guarantee strictly to such amount of capital as had been previously found necessary.[1]

The Members of the Viceroy's Council were even stronger in their views. Sir J. P. Grant, President of the Council, objected radically to the principle of guarantee, and thoroughly condemned the system as involving the great evil of "double management." Moreover, he contended, it really meant "the raising of money by a special public works loan, but under conditions, the most disadvantageous possible for the public, who must be taxed for the payment.[2] The Finance Member Hon'ble S. Laing also recorded a similar opinion and said that as the management was non-resident and the data as to first cost and probable traffic were very uncertain, the shareholders depended almost exclusively on the guarantee. All the advantages of private enterprise were thus neutralised.[3] Sir W. Denison, the then Governor of Madras, commenting upon this Minute

[1] Minute of Lord Canning, No. 2 of 29th November 1858.

[2] Minute by Sir J. P. Grant, dated the 5th May 1857 on E. B. Ry. and 4th September 1858.

[3] Minute of Hon'ble S. Laing, April 1861.

remarked that the guarantee system was certain to involve Government in unprofitable and expensive undertakings, throwing upon it the greatest risks with least participation in profits. The retention of companies as agencies for raising capital was, in his opinion, unnecessary. The Government of India, while agreeing with some of these views, thought that but for the guarantee the progress in railway construction in India during the time could not have been achieved.[1]

In the meantime the Mutiny had forced the Government of India to contract heavy loans in England. This affected adversely the financial operations of the companies, and for the time being Government contemplated raising funds for the railways directly. It was arranged to postpone work on certain sections, which had not been begun, and to guarantee no further projects until the lines then sanctioned had been completed.[2] The Oudh Railway Company which had carried on surveys with the approval of Government was asked to stop work, and the amount spent by it was returned with interest. Government was anxious to keep down capital expenditure and great difficulty arose in allocating outlay under Revenue and Capital. After some correspondence with the parties concerned the Secretary of State laid down in 1864 certain rules for guidance in the matter. The companies accepted them.[3]

The discredit of the Guarantee System thus came about. Had the interest been earned and the pressure on Government been reduced, probably the system would have remained unimpeached. But, as it was, the State found itself more and more embarrassed as years rolled on. Interest on capital and the cost of land and supervision began to

-Despatch No. 68 Ry., dated the 27th July 1861.

Juland Danvers, Administration Report, 1860-61.

Despatch by the Secretary of State, dated 9th March 1864.

accumulate fast, and these burdens were accentuated by the losses on exchange.[1]

II. Attempts to form Unguaranteed Companies

While the evils of the original guarantee system were under discussion several attempts were made to form private companies for railway construction without a guarantee. The attempts to raise capital for the Calcutta and South Eastern Company without a guarantee, and the subsequent concession sought, has been noted in the previous chapter. The idea was then gaining ground that light branch or feeder lines could be constructed with great success even without State guarantee. Lt.-Col. H. Yule suggested that in cases of *bona fide* tramways or feeders to the main system of lines the Government might sanction the construction of narrow gauge light lines.[2] The proposal was welcomed by Lord Canning as the only feasible solution of the difficulties. In 1862-63 and 1863-64 the Indian Branch Railway Company as originally projected by Mr. J. E. Wilson, and the East Indian Tramway Company were formed in England, with a view to construct short feeder lines on a narrower gauge than the main line. The assistance sought from Government was merely the grant of land and other incidental help in surveys and in the smooth progress of the work. The expectations of the projectors were not realised and very soon after the formation of the company further Government assistance was solicited. In

[1] The strongest condemnation of the Guarantee System is found in the evidence of General Sir Richard Strachey and Major L. Conway-Gordon before the Parliamentary Select Committee, 1884, as also in the notes and minute of Capt. E. C. S. Williams and Lord Lawrence.

[2] Note, dated 7th September 1861, by Lt.-Col. H. Yule, Secretary Government of India, Public Works Department.

1864 the Secretary of State decided to encourage new construction only with some assistance other than a guarantee. In the case of the Indian Branch Railway Company a subsidy of £100 per annum per mile opened, for 20 years from the date of opening, was proposed, together with additional sums of £1,000 for every bridge that required £10,000 or more for construction. The East India Tramway Company was also offered similar terms.[1] An important feature of these proposals was that they would involve no interference by Government except such as was usual for the safety of the public, while the projectors were required to complete their works economically and rapidly within a limit of time fixed. In 1865 lines from Delhi and Agra to Jaipore were projected on certain other terms of subsidy as suggested by Colonel Strachey. None of these attempts, however, proved successful, and while nothing came out of the last mentioned project the other two lines could be constructed only with greatest financial difficulty. In fact, the Oudh Railway, from Cawnpore to Lucknow, could be completed in 1867, only after a loan of £60,000 was obtained from the State.

In 1867 the Secretary of State informed the Government of India that as the attempts at independent companies had been a failure, it had after all been found necessary to revert to the guarantee system.[2] New contracts were thereupon entered into with the Oudh Railway and the Carnatic Railway, in 1867 and 1869, providing them with guaranteed interest. The Bombay Baroda and Central India and the Great Indian Peninsula Railway Companies also made some attempts to raise capital on terms of subsidy for the construction of branches from their main lines. Investors, however, could not be attracted and finally these railways also fell back on Government guarantee.

[1] Juland Danvers, Administration Report, 1863-64.

[2] Despatch No. 18 Railway, dated 23rd March 1867.

The new contracts entered into during this time provided slight modifications of the old terms although no material change in the relation between the State and the Companies was effected. In view of the then prevailing average value of silver the rate of exchange was fixed at 2 shillings instead of 1*s*. 10*d*., and land was granted in perpetuity, but the State could acquire the property at the end of 20 years and at any subsequent decennial period. The Companies were to be subject to any future legislation for the regulation of railways in India, and the Secretary of State would thoroughly examine the estimates of cost of construction before the guarantee would come into effect.[1] In some respects these new terms were slightly more liberal than those of the earlier contracts.

III. Modification of the Old Guarantees

The principal drawbacks of the first contracts, apart from the general defects of the guarantee system, have already been noted. The Government of India and the Secretary of State discussed for many years how best those evils could be remedied. The most important points that required immediate attention were the control over capital expenditure, alteration in the rate of exchange, and provision for Government share in surplus profits. In the terms of the new contracts with the Oudh Railway Company, as well as with old companies for branches and extensions, safeguards were accordingly provided. With respect to the old guaranteed lines, however, the Secretary of State, after prolonged negotiations, offered in 1869, to wipe out the whole debt on account of the advance of guaranteed interest and to keep no further account of such liabilities of the companies, on

[1] Railway No. 44, from Secretary of State, dated 11th June 1868.

condition that the Government would receive for all time to come half of the surplus net profits. The East Indian Railway which had by the time begun to show profits rejected the offer. The Great Indian Peninsula, Madras, Bombay Baroda and Central India, Sindh Punjab and Delhi, Great Southern of India, and the newly constituted Carnatic Railways agreed to the arrangement. In the case of the first three of these the Secretary of State had to grant a further concession of waiving the Government's right of purchase after the first 25 years.

The Government of India had never intended to modify the old contracts with such terms. The Secretary of State did not inform it of his arrangements in time and did not consult it about the postponement of the right of purchase or the surrender of the arrears due to the State on account of guaranteed interest. As soon as the intentions of the Secretary of State were known, rather indirectly, through some questions in Parliament, the Government of India hastened to lodge its strong protest against the proposals.[1]

The Government claimed that for various reasons it was desirable to acquire the lines as soon as possible. The concession of half the surplus profits was of doubtful value and against this the wiping out of the debt of the companies on account of guaranteed interest with offer of further privileges, meant very substantial loss to the State. There was no apparent object in making these concessions. The credit of the Government of India was never better. The lines under construction were approaching completion, and the demands of the companies on the money market had almost ceased. It was, however, in vain that the Government of India sought to discover the grounds which actuated Her Majesty's Government in this matter; and looking at the stage at which it had arrived, as evidenced by interpellations

[1] Despatch No. 80 of 12th August 1870.

in Parliament, the Government could not but regret that no opportunity was afforded to it of placing before the Secretary of State, its views on that important question.[1]

The protest reached England too late to affect the decision of the Secretary of State. By that time the policy of State construction and management had been accepted and put into operation. In view of this, one cannot understand why the Secretary of State took such steps as were considered injurious by the Government of India.[2] The loss to the State had been a very material gain to the shareholders, and in losing the opportunity of reducing the high and then unnecessary rate of guaranteed interest of five per cent a fault of omission was committed, which it is difficult to extenuate.[3]

The Secretary of State hoped that with the increase of traffic and improvements in management the earnings in future would be large enough to justify his action at the time. He also assured the Government of India that in future no such steps would be taken by him without previous reference.[4]

IV. State Construction advocated

The experience of the Government of India, the serious burdens that the construction of railways by private agencies entailed upon the State, and the difficulties of ensuring economy and checking extravagance, led Lord Lawrence's Government to advocate direct state construction and management. When the attempt at unguaranteed railways

[1] Despatch No. 80, dated 12th August 1870. Government of India to Duke of Argyll.

[2] Mr. Horace Bell strongly comments on this.—" Railway Policy," pp. 26-27.

[3] Chesney, " Indian Polity," Ch. XIX.

[4] Despatch No. 82 Railway, from Secretary of State to Government of India, dated 3rd December 1870.

failed and the Secretary of State extended guarantees to the Oudh and Carnatic Railways, the Government of India despatched a strong comment on the whole policy of the time.[1] The extension of guarantees to those particular lines was in its opinion a result " for which everyone must have been prepared." The Government, however, took exception to the terms of the contract. It held that a fixed sum should be stated as the maximum limit of expenditure covered by the guarantee, extensions of the limit being only allowed as net receipts would reduce the annual charge. An average mileage cost should be determined and guarantee allowed on such an amount only. Land should be granted for 99 years and not permanently, with the right of re-entry after that period. The State should take the whole of the surplus profits over the guaranteed interest until the advances for guarantee were repaid, and should receive half the surplus earnings thereafter permanently. The companies' servants should be brought under more direct control of the Government of India, " it being empowered to suspend or dismiss all railway officials at its discretion." Finally it was pointed out that it would be politically dangerous and embarrassing to the State to allow very large investments of private capital, particularly English, in the guaranteed railways in India. The main danger apprehended was perhaps the serious dislocation of the foreign exchanges and their adverse effects on the finances of the Government of India. The Government despatch was accompanied by several minutes from the Viceroy and the Members of his Council together with two able and exhaustive notes on the Guarantee System by General (then Captain) Sir E. C. Stuart Williams, R.E., and Colonel C. H. Dickens, R.A., Secretary to the Government in the Public Works Department. In these an

[1] Despatch from Government of India No. 125 Railway, dated 3rd December 1867, with Governor-General Lawrence's Minute, dated 16th August 1867.

experiment with a policy of State construction and management was strongly advocated.[1] There was general agreement in the Government about the desirability of ultimate acquisition by the State of all the railways in India, and it was urged that this aim should be steadily kept in view. The Governments of Madras and Bombay also supported these ideas.

The Secretary of State (Sir Stafford Northcote), however, held different views.[2] The claims of the Government for greater control, and authority even over the staff, were at once disposed of on the ground that no company would agree to them and no competent and respectable officer would accept service under such dual and uncertain masters. The existing provisions for surplus profits could not be interfered with because in that case much higher rates of interest would be necessary to ensure the supply of capital. The proposal to buy the railways would in no way remove the danger supposed to accrue from large investments of English capital so long as money would have to be raised in any case from the English market. He was prepared however, to admit one important departure in the then railway policy. It seemed to him desirable that future railway projects should be classified as either "Commercial" or "Political." The Guarantee was "upon the whole, the one best adapted for the extension of one class of railways, *viz.*, the 'Commercial.'" For the Political class he was "inclined to think that direct Government agency might be preferable." When the most profitable lines, as

[1] Notes by E. C. S. Williams, dated 16th July 1867, and by Col. C. H. Dickens, dated 10th July 1867.

The Note prepared by Capt. E.C.S. Williams covers 52 foolscap pages in print and is one of the few documents of abiding interest for students of Indian Railway Development.

[2] Despatches Railway No. 3 of 16th January 1868, and No. 5 of 24th January 1868.

hitherto constructed, had been provided with the guarantee it was his conviction that railways in India were not likely to be made without such aid. The Government of India argued in reply that the question of direct action by the State should be regarded in broad light and not merely from a narrow view of its bearing on the money market. There was no doubt that the Government could raise sufficient money and make all arrangements for railway undertakings without the intervention of companies at all. It was also pointed out with a sense of demur that in all arrangements with investors and in details of contracts the Government of India was not given sufficient opportunity of placing its opinion, while the practical working had to be carried out in India.[1]

In 1869 the Duke of Argyll was appointed the Secretary of State for India after a change in the Home Government, and Lord Mayo succeeded Lord Lawrence as the Viceroy. Prior to his departure Lord Lawrence recorded his conviction in a very able minute and showed at great length the necessity for direct State construction of Indian Railways.[2]

It was pointed out that both from financial and administrative points of view company management offered no peculiar advantage that could be set off against its evils, and that could not be secured by State agency. Lord Dalhousie's arguments regarding the prosecution of large public works by private enterprise without interference by the State were refuted. "It is an abuse of language to describe as an interference with private enterprise what is only a refusal to support private speculators and to guarantee them from all possible loss by the credit of the State, or to allege that the

[1] Despatch No. 122 Railway, from Government of India, dated 15th August 1868.

[2] Lawrence's Minute, dated 9th January 1869. It is believed that the document was actually prepared by General Richard Strachey, who was then in charge of Public Works.

investment of capital by private persons is hindered by Government executing the works, when private persons refuse to do so at their own risk." Under existing arrangements the whole profit went to the companies and the whole loss to the Government. Financially "the intervention of the company could not add to the security in the smallest degree, nor to the facility of obtaining money, nor would the Government be thereby free from the pressure caused by the yearly interest." Even in times of political commotion the power of Government to borrow had been and would be greater than that of the companies.[1] As to the capacity of Government for efficiently carrying out the vast undertakings it was contended that there was no doubt that more economical and efficient arrangements could be made by the State than had been exhibited by the history of guaranteed railways which gave "illustrations of management as bad and extravagant as anything that the strongest opponent of Government agency could suggest as likely to result from that system." It was "unreasonable to think that if the Government deliberately borrowed money specially for railway construction the work would be stopped on every occasion of temporary financial difficulty as had been alleged."

With these grounds amongst many others Lord Lawrence recorded that it was totally unreasonable and inconsistent with the true interests of India to continue a system under which the revenues had to bear the whole risk of loss and could derive no direct benefit, in preference to one, which with no greater and probably much reduced

[1] This point was very strongly urged also by Mr. Thornton, General Strachey and several other witnesses before the Finance Committee of 1872, and Parliamentary Select Committee of 1884. In reply to Qs. 309 and 5297-98 of the latter committee General Strachey and Mr. Westland further asserted that in most cases Government could have borrowed the money on better terms than the Companies.

risks, could entitle the public to the whole of direct profits, making them available for reducing taxation or preventing the imposition of new burdens.

There were three other important matters dealt with in the same Minute that deserve attention, namely, the Secretary of State's opinion on "political" and "commercial" lines, the adjustment of expenditure to the extension of railway network, and the modification of gauge and standards of construction.

The Secretary of State's latest suggestion was that State activities should be confined only to "political" lines leaving the "commercial" or profitable lines to guaranteed companies. Lord Lawrence thought that under such an arrangement the Government would take all the unprofitable lines for itself and give all the profitable ones to private speculators, carefully guarding them, at the expense of the State, against any possible loss. The State would suffer in reputation from the results of the management of its own lines, which would necessarily be everywhere unsuccessful. The true cause of this would certainly be overlooked and the discredit of the financial failure would be used as a weapon against the State in all its relations with the companies.

With regard to the extension of railway network Lord Lawrence conceived the idea of railways breeding railways, keeping the net annual charges on the revenue within £2 millions, then regarded as the limit which the Indian exchequer could bear. In a carefully prepared table it was shown that, at the end of 20 years, 5,000 more miles could be added to the railway system of India, under his plan, with practically no enhancement of the total interest charges for old and new lines. The tendency of companies to increase capital outlay without regard to earning capacity was once more condemned. Dealing with the numerous projects then under consideration Lord Lawrence wrote

that "the first aim should be to fill in a secondary series of subsidiary main lines, and laying them out with careful attention to the importance of making them form a consistent whole. As regards the cost of construction, economy was to be one of the essential conditions, its requirements being as rigid as any of those imposed by physical conditions. Herein came the most important suggestion in this connection that has brought in far-reaching results in the development of Indian Railways. "If on a further examination in detail of the probable cost and returns of any of the lines which otherwise seem desirable, the expense of lines of the ordinary gauge seems prohibitory, while lines of a narrow gauge would be financially practicable;" Lord Lawrence considered it "a most mistaken view to reject the narrow gauge line." And so with any other modification of the standard of construction. Broad views and ready adoption of all truly sound measures were urged as essential. It would be a source of lasting regret if the progress "should be retarded by the weight of administrative prescription or engineering prejudice."[1]

Lord Mayo's government was in entire agreement with all that was recorded by Lord Lawrence and his colleagues. In March 1869 the Government of India again pressed for a definite change in the policy, taking advantage of the change in the Ministry in England. It urged: "we regard the direct action of the State as most likely to bring about generally satisfactory results."[2] The Duke of Argyll, the new Secretary of State for India, readily concurred with the views of the Government of India, and observed: "whatever may have been the strength of the considerations which 20 years ago induced the Govern-

[1] Lawrence's Minute, dated 9th January 1869.

[2] Government of India Despatch No. 24, dated 11th March 1869.

ment to entrust to guaranteed companies the construction of railways in India, I concur with your Excellency and the late Viceroy, in the opinion, that the time has now arrived, when both in raising and in expending such additional capital as may be required for new lines in India, the Government should secure for itself the full benefit of the credit which it lends, and of the cheaper agencies which ought to be at its command."[1] Approval was at once granted to the construction by the Government of India of the line from Lahore to Rawal-Pindi, as well as to the preliminary survey that had been made for a line from Carwar to Hubli. It was still considered, however, that the formation of branches and subsidiary small extensions of existing lines could more conveniently be left in the hands of guaranteed companies. Whether Government agency was employed or not, full attention was drawn to economy and to the careful avoidance of all expenditure not absolutely required for the stability of the works, or for the accommodation of traffic. The need for more suitable arrangement for Government control was recognised, and it was accepted, as a sound principle, that surplus profits should, for all time, be equally divided between the Government and the companies. Mention of repayment of the advance as guaranteed interest was thereupon dropped as unnecessary.

In the financial statement to Parliament in that year, the Secretary of State referred to these changes in the railway policy, and expressed the hope, that with Government construction there would be a single authority and single management, and a considerable reduction in the cost of Indian railways.[2]

[1] Railway No. 42 from Secretary of State, dated 15th July 1869.
[2] Duke of Argyll, Financial Statement of India, 1869.

A new epoch thus began in the history of the railways of India, and the State vigorously carried on construction and management by its own agency, for the next decade, until circumstances compelled the Government once more to seek the aid of private companies.

V. Financial Policy and Arrangements (Central Government)

The new policy necessitated well-defined financial arrangements by the Government of India. From 1854 when Lord Dalhousie established the Public Works Department all expenditure was treated as "ordinary" expenses and charged against the revenue of the year. The works were naturally divided into two heads, namely, those for maintenance and those for extension of public services, such as railways, docks, and canals. The cost of the latter had mostly been borne out of money borrowed through different agencies.[1]

The policy of constructing large public works by the direct agency of the State, from borrowed money, may be said to have originated with the note of Sir W. Denison, Governor of Madras, in 1861.[2] The Government of India agreed to the suggestion.[3] In the same year, 1861, a loan was raised in England to meet the demand of the guaranteed railway companies, the remittances from India having been reduced on account of famine and the after-effects of the Mutiny. A surplus balance of three millions sterling out of this loan was diverted, in 1862, to the construction of canals and roads, but the application of the money was forbidden to works not likely to prove remunerative.[4] In

[1] Select Committee on East India Public Works, 1878-79, Report, p. iv.

[2] Sir W. Denison's note to Hon'ble Mr. Laing's Minute of 1st April 1861.

[3] Despatch No. 68, dated July 27, 1861.

[4] Evidence of Henry Waterfield, paras. 6030-6064, Select Committee on East India Communications, 1884.

1865, Sir John Lawrence's government felt the necessity for extensive construction of barracks, etc., for the large number of British soldiers brought out after the Mutiny, and proposed a large scheme to be undertaken with borrowed money. The outlay was considered to be very urgent, and sanction was at first given; but soon afterwards the Secretary of State withdrew the permission, holding decided objections to such expenditure. In 1866, however, Lord Cranbourne, the new Secretary of State, sanctioned a loan of Rs. 70 lakhs (£700,000) for public works, and approved of the proposals of the Government of India to separate "ordinary" from "extra-ordinary" expenditure, so that the latter might be financed out of loans.[1] In the three years immediately following, the Government of India pressed more and more for larger sums of money for public works, and long correspondence with the Secretary of State followed. The general trend of this correspondence was that the Home Government constantly endeavoured to limit the works constructed out of borrowed money to those which might be remunerative, and for which the necessary loans could be raised in India; while the Government of India desired to impose a different limit, namely, to accept a fixed annual charge on the revenues of India in respect of productive public works.[2]

In 1869, the Duke of Argyll, in reply to further representation from the Government of India, definitely declined to accede to the proposal for borrowing a specific amount of money annually for the next five or ten years, advised the Government to seek to raise money in India, and relaxed the restriction created by his predecessor by the stipulation

[1] Evidence of Henry Waterfield paras. 6030-6064, Select Committee on East India Communications, 1884, and evidence of Sir T. L. Seccombe before Select Committee, Public Works, 1878-79, Qs. 395-400.

[2] Report of the Select Committee on E. I. Public Works, 1878-79, p.xvii.

that public works could be undertaken with borrowed money only when they were likely to be remunerative.[1] A strict eye on economical construction and careful administration was also insisted upon.

With the adoption of the new policy of State construction, large schemes of railways were at once undertaken with borrowed capital raised directly by the Government. This entailed upon the Government of India rather heavy expenditure for a few years, and the attention of Parliament was drawn towards it. From 1871 to 1874 a Select Committee on Indian Finance enquired into the question, and in 1874, Lord Salisbury laid down three principles: namely, (*a*) that no works should thereafter be admitted into the "Extra-ordinary" class of public works, and constructed out of loans unless they were expected to repay the interest on the capital outlay, including interest during construction; (*b*) that famine preventive works might be made out of the revenues of the year and recourse might be had to borrowing if necessary; and (*c*) that all loans should be raised in India, it being inexpedient to increase the Home Charges in England.[2]

These rules created some restrictions on the free exercise of judgment by the Government of India, and in 1876 Lord Northbrooke's Government pointed out, that "the principle by which our expenditure upon 'extraordinary' public works has been guided is that however advantageous the extension of railroads or irrigation works may be, it would not be right to carry them on at such a rate as would require the imposition of fresh taxes."[3] The rate of expenditure then determined upon according to certain detailed

[1] Report of the Select Committee on E. I. Public Works, 1878-79.

[2] *Secretary of State's (Lord Salisbury) Despatch, dated the 23rd July 1874;* also Report of Select Committee, *1878-79.*

Government of India Despatch, dated the 7th April 1876.

forecasts drawn from the experience of three previous years was about £2½ millions per annum. The Government of India demanded some relaxation of the rules. The Secretary of State, however, re-affirmed his previous views, particularly for new undertakings, and admitted an exception only in regard to works under construction.[1] Instruction was at the same time given that thenceforward a separate account showing the financial results of "Productive Public Works" should be kept.

A disquieting factor calling for great caution in expenditure on public works, particularly out of money borrowed in England, was the continued fall in the value of silver at the time. As a result the cost of remittances to England for interest on old investments had already increased very largely. In 1876 the Government of India accordingly determined to bring down expenditure on "extra-ordinary" works within the amount which could be borrowed in India on advantageous terms. The Secretary of State agreed, but the new factor, of scarcity and famine, more powerful than any that the Government could foresee, intervened. and altered the whole position. In fact the famine expenditure of the years immediately following rendered the policy entirely futile.

A very important financial step was then undertaken. In December 1877, the Government of India proposed to improve its annual resources to the extent of £1½ million partly by reduction of expenditure, and partly by fresh taxation, with a view to allot that sum from revenues to productive public works, or to famine-relief, as found necessary. The Secretary of State sanctioned the creation of a Famine Insurance Fund, but considered that the money should be annually applied to the repayment of debt in

[1] Evidence of Sir T. L. Seccombe, paras. 436-40, Select Committee, E. I. Public Works, 1878-79.

England, whence, after all, money would have to be borrowed in times of stringency. He objected to the use of this sum for public works in India on the ground that this would practically mean money being borrowed in England for such works against existing rules.

In September 1878, the Government of India adverted to the difficulty of discriminating between works strictly "productive" and those only admissible as providing against famines, and proposed the fixing, as experience might suggest, of a maximum yearly dead-weight charge for works constructed as productive, whether under the then existing strict conditions, or in order to prevent, relieve, or protect from famines. The idea was to limit to a specific maximum amount the annual net expenditure for interest in capital outlay on all works, both protective and productive, after allowing for their net income. As affecting the Famine Insurance Fund the proposal was that in addition to its net existing liability the Government would add an equal sum not exceeding Rs. 25 lakhs (£250,000) which would form the first charge on the fund of £1½ million, on consideration that although not fully productive the works would cause an equivalent reduction of the ultimate liability on account of famines.[1] The Secretary of State rejected these proposals at first, but when the importance of making some distinct provision for certain protective lines was emphasised, he agreed that after appropriating half of the Famine Insurance Fund to the repayment of debt in England the other half might be used for the relief of famines, the extinction of debt, or the construction of protective works. The third phase of the Famine Insurance Grant was ultimately reached in 1881 when Lord Hartington permitted "protective" public works to have the first half out of the sum of £1½

[1] Evidence of Sir T. Seccombe, Qs. 458-60, Select Committee, E. I. Public Works, 1878-79.

million leaving the other half to be divided between famine relief and extinction of debt.

A Select Committee of Parliament examined in 1878-79 the question of financing public works in India with borrowed money. It found that "although considerable sums have been wasted and certain profitless schemes undertaken," the policy of borrowing for productive public works might within certain limits be continued, because, the expenditure on railways and irrigation, though not remunerative in the aggregate, had been beneficial to India on the whole. The recommendations were: that no new works should be undertaken with borrowed money unless likely to repay the interest on their outlay; that the annual maximum amount to be raised in one year for the time being should be limited to £2½ millions; that when, in addition, surplus revenue was spent on such works it should be treated in the accounts as if the general debt had been relieved, the productive works debt being increased to that extent; that care should be taken not unduly to increase the establishment; that such loans should always be raised in India unless the difference in the rate of interest was so considerable as to afford full compensation for the disadvantage of borrowing in England; and that whenever possible a portion of the Famine Insurance money should be remitted for the discharge of debt in England.

These recommendations involved no new policy, and were in complete accordance with the arrangements made by the Secretary of State. The Government of India was, however, advised in October 1879 to limit the total expenditure on 'productive' works, whether from borrowed money or out of surplus revenues to £2½ millions for the time being.[1] This restriction was perhaps due to the

[1] Secretary of State's Despatch, dated 23rd October 1879.

large debts that had been accumulating at the time, and to the further apprehension of heavy expenditure on campaigns on the North West Frontier. But the Government of India remonstrated.[1] Although it had been its intention, ever since 1876, to confine capital outlay on productive public works to an annual sum of £2½ millions, in actual working the Government could never keep within that limit. Up to 1879-80, the expenditure was never below £3½ millions, and averaged more than £4 millions per annum.

The Secretary of State therefore sanctioned the appropriation of surplus revenue provided that it had actually become a surplus and not merely estimated to be so.[2]

In the same year another important financial concession was granted when the East Indian Railway was purchased (in 1879). It was ruled that any money which might have to be borrowed for the improvement of that line might be treated as additional to the £2½ millions.

The basis of the financial policy for the entire decade 1868-69 to 1878-79 appears to have been the constant check and restriction by the India Office on the tendency towards larger and larger expenditure by the Government of India.[3]

In 1881 Lord Hartington summed up the rules regarding the construction of productive and protective works and definitely laid down that those railways that would, within five years of their completion, pay at least 4 per cent on their capital outlay, including interest in arrears up to that date, would be regarded as "productive." On the other hand, "protective" works were held to be such as were

[1] Government of India Despatch, dated 25th September 1879.

[2] Secretary of State's Despatch, dated 13th November 1879.

[3] Evidence of General Richard Strachey to Parliamentary Select Committee of 1884, Q. 6.

not directly remunerative, but were necessary to guard against future expenditure on famine relief. At the same time the next important change in railway policy was foreshadowed by the announcement that the construction of railways by private capital, either European or local, should be encouraged " on the exclusive security of the success of the undertaking, without a guarantee." [1] Lord Hartington's policy proved too rigid, and had to be modified in a few years. In expecting as high a return as 4% within five years of opening the Secretary of State showed an optimism for the growth of traffic which could not be justified on grounds of railway experience elsewhere.

VI. Financial Assistance from Provincial Governments and Indian States

An account of the railway finances of this period would be incomplete without a reference to Provincial State railways and Indian (Native) State railways. The possibility of securing capital locally was first demonstrated by the construction in 1870 and 1871 of two short lines, the Khamgaon and Amraoti branches from the G. I. P. Railway, out of surplus revenues from the assigned territories of Berar. These lines were built by the State with a view to improve facilities for conveyance of cotton and for the time being were classed under Native State railways. In 1875 the local Government of North Western Provinces, which then included a large portion of the present United Provinces of Agra and Oudh, constructed with local funds and on their own responsibility a promising line of 30 miles from Muttra to Hathras. Various other lines of local interest were also pressed for, and the necessity was felt

[1] Despatch No. 365 Financial, dated 8th December 1881.

to have some defined policy for these undertakings. Accordingly in 1878 the Government of India approached the Secretary of State with proposals to delegate financial responsibility for certain lines to local Governments, with power to raise provincial loans for the purpose.[1] The Secretary of State concurred in the policy of interesting Indian landowners and capitalists in the development of the resources of their country, and rules were framed for the devolution of management and financial responsibility to the provinces. The construction and working was entirely left to the local governments, subject only to a general control by the Government of India. Provincial debenture loans were permitted to be raised in the name of the Secretary of State with certain reservations, and provision was made by which the holders of such debentures would be entitled to a share in the surplus profits after the interest on the loan and on Government advances had been paid. In addition to the lines already constructed by local administrations, the Patna-Gya and Cawnpore-Farukkabad lines were immediately handed over respectively to Bengal and the North Western Provinces, for construction and management. A movement towards decentralising responsibility, and even control, was for a time in favour, and by the end of 1881, no less than 865 miles of State railways were placed under Provincial Governments.

In the first period of railway development little attempt was made to interest the Indian States, and the resources of the princes were not taken into consideration. In fact, the railways of that time had in most cases been undertaken with a pre-eminently political end in view, and perhaps it was not considered wise to invite the States to take part in the railway construction of India. In

[1] Government of India Despatch No. 186 Railway, dated 2nd May 1878.

the first decade from 1850 important concessions had been obtained from the Gaekwar of Baroda, and other Indian princes, for railways passing through their territory. In 1860-61 a scheme of railways in the Gaekwar's State was projected, but nothing was done in view of the political difficulties of permitting private companies to construct lines in non-British India.[1] After prolonged consideration of the matter Sir Stafford Northcote finally admitted in 1869, the desirability of direct State construction of such lines in particular, classifying them as "Political."[2] In the meantime, the Government of India was negotiating with the Nizam of Hyderabad and with the Holkar of Indore for financial assistance from them for the construction of lines within their territory. In 1870 satisfactory arrangements were made with these two States for the provision of capital.[3] The Nizam agreed to provide the whole capital of £1 million required for the line from Wadi, on the G. I. P. Railway, to Hyderabad, partly from the resources of the State and partly from local contributions. The profits of the working would go entirely to the State, the construction, working and management being exclusively carried on by the Government of India. The line was opened for traffic in October 1874.

In the second case the Maharaja Holkar offered a sum of one million sterling towards the construction of a line from Khandwa to Indore, on condition that he would receive from the British Government interest at 4½% per annum, together with half the surplus net profits in excess of that amount.

Other Indian princes followed these examples quickly. The Maharaja Scindia of Gwalior lent a sum of Rs. 75 lakhs (£750,000) at 4% per annum interest, without any

[1] Administration Report, 1860-61.

[2] Despatch No. 3 of 16th January 1869.

[3] Administration Report, 1869-70.

participation in surplus profits, for the Indore-Ujjain-Neemuch line. The Gaekwar advanced the whole capital outlay for a number of small 2½ ft. gauge lines within his State, and Mysore, Bhavnagar, Gondal, Bhopal, and others came forward in succession.

It is necessary to mention here that following a treaty of commerce in December 1878, two railways were undertaken from the Portuguese and French possessions of Mormugao and Pondicherry to the nearest lines in British India. After providing for reciprocal freedom of commerce the Government of India agreed, if satisfied with the *bona fides* of the projectors, to grant land and other facilities to joint-stock companies that would construct the lines. Nearly sixty miles of railway were provided under these arrangements by 1888 and ten years afterwards another fifteen miles were added.

VII. Break of Gauge in India[1]

The adoption of the new policy enunciated by Lord Lawrence was closely connected with a break of gauge. The reasons for adopting the 5 ft. 6 in. gauge as the standard for India, and the circumstances in which lighter and cheaper lines were sought after in 1862-65, have been examined. The first break occurred in December 1863, when the Nalhati-Azimgunge branch was opened on a 4 ft. gauge. Two years later the Indian Tramway Company constructed the Arconum-Conjeeveram line in South India on a 3 ft. 6 in. gauge.[2] In sanctioning these lines the Government of

[1] For detailed account, see Colonel W. S. Trevor, Administration Report, 1880-81, Ch. VI.

[2] The change in the attitude of the Government is traceable to Lt.-Col. H. Yule's note, dated 7th September 1861. Referring to what he called the "cattle-draught line" in Oudh, he observed that although the gauge of the larger railways should not be questioned, there was no reason for giving up a great economy in that case particularly when the point of contact with the main line was to be on the large river Ganges which was for a long time likely to remain unbridged.

India noted that although the narrow gauge light lines were permitted there should be no doubt as to their temporary and provisional character. Such lines would be replaced by 5 ft. 6 in. gauge lines of a more substantial character, whenever the development of traffic rendered it advisable, and in no circumstances would they be allowed to grow into a system which might compete with the national standard gauge railways. Subsequently, Lord Elgin's Government was opposed to a break of gauge except in detached and fragmentary sections. Lord Lawrence, however, opened the question again in 1868, with great force of argument. In his famous minute, he contended: "wholly to reject railways for a country which is not able to support lines of the most costly description, is quite unreasonable." If in such circumstances "lines of a narrow gauge seem financially practicable, I should consider it a most mistaken view to reject the narrow gauge line." [1]

The Government of India thereupon took up a new attitude. It declared that it was not expedient to have a break of gauge for merely short lengths of line. "If narrow gauge lines are to have a fair field they must be given a sufficient development to render the cost of shifting goods from their wagons to those of adjoining broad gauge lines unimportant in relation to the freight for the average distances over which the goods are carried." [2] The suitability of the narrow gauge for certain less productive areas was at the same time emphasised. The Duke of Argyll concurred with these views, and both the Secretary of State and the Government of India began to examine what exactly the new narrow gauge should be. Lord Mayo requisitioned the assistance of an American engineer of experience, and an expert committee sat during 1870-71, thoroughly

[1] Lord Lawrence's Minute, dated 9th January 1869.

[2] Despatch to Secretary of State, No. 25 Railway, dated 11th March 1869.

to look into the various proposals for 2 ft., 2 ft. 6 in., 2 ft. 9 in., 3 ft., 3 ft. 6 in., and 4 ft. gauges.[1] Evidence was collected of the working of narrow gauge lines in other countries including the light Festining and Mid-Wales railways. It was proved that the engineering objections to narrow gauges had largely been removed.

The Government of India proposed to divide the railways of the country into two classes, the primary trunk lines of the broad standard gauge, and the secondary lines designed to open out less productive areas to be constructed on the narrow gauge. What exactly that gauge would be was a comparative matter of detail. It recorded: "Firmly convinced of the sufficiency of a narrow gauge to carry the traffic of our secondary lines and fully satisfied that an important economy must ensue in the aggregate over the whole extension of the system, we should fail in our duty to India, if we hesitated to advocate the adoption of gauge narrower than the present standard."[2] The lines in Rajputana and the Punjab were considered by the Government of India, to be best suited for the narrow gauge, and in order to secure uniformity throughout the length from Karachi to Lahore and the Frontier, it was proposed to convert the already constructed portions to narrow gauge, or if the Sindh-Punjab Company did not agree, a third rail might be provided. The Indus-Valley and the Punjab-Northern lines were pre-eminently strategic lines, and serious objections were raised, both in India and in England, to the break of gauge for the Punjab and frontier lines. Here the real "battle of the gauges" was fought in India through four long years from 1870 to 1874.

The Secretary of State wanted the views of the military

[1] Consisting of Colonel Dickens, General Strachey, Mr. Fowler, and Mr. Rendel.

[2] Railway No. 51 and No. 52, Despatch to Secretary of State, dated 17th May 1870.

authorities, and Lord Napier, who was then the Commander-in-Chief in India, expressed his strong objection to the proposed break of gauge. He submitted, however, that rather than see the construction of the lines delayed, he would admit the adoption of a minor evil, the break of gauge. The Secretary of State asked the Government of India, if, in view of the opposition, it would accept the 5 ft. 6 in. gauge with lighter rail and cheaper standards of construction. Lord Mayo's Government thought that such a step would mean no improvement whatsoever, for in any case special light engines and rolling stock would have to be provided.

The Duke of Argyll was at one with the Government of India in its anxiety to secure economy and cheapness and accordingly in October 1870, he left the question of gauge to be decided by Lord Mayo.[1] The following December, the Viceroy recorded what he then thought his final views on the matter, deciding that the Indus-Valley and the Peshawar lines should be on a narrow gauge of 3 ft. 3 in.[2]

The question of adopting in India the metrical system of weights and measures was at that time under consideration and a draft bill was actually before the Legislative Council for providing it. As the gauge recommended by Lord Mayo was so near the proposed standard of a metre or 3 ft. 3⅜ inches, it was decided to accept the metric gauge as the narrow gauge for Indian railways.

The decision was reported to the Secretary of State early in 1871,[3] and orders were issued for the construction on this gauge of the Indus-Valley, Lahore-Rawalpindee, Agra-Delhi, and Rajputana lines. A section of the Punjab-Northern line between Jhelum and Lahore had already been commenced as a light 5 ft. 6 in. line, but it was thought

[1] Despatch, dated 26th October 1870.
[2] Dated 30th December 1870.
[3] Despatch, dated 10th January 1871.

that the work had not progressed sufficiently far to necessitate considerable alterations.

As soon as this was known in England a great outcry was raised against it.[1] The Duke of Argyll was upset, and considerable correspondence followed during the two following years. The engineers in England continued agitation,[2] and the attention of the House of Commons was drawn to the matter. The Secretary of State, as a consequence, had to reopen the subject with the Government of India.[3] Although commercially the metre gauge lines were considered to be quite adequate for the demands in the Punjab and the Frontier, doubts were entertained regarding their efficiency for military requirements. Thus, it was "weighty questions of political necessity" which induced the Secretary of State to reconsider the gauge at a stage when considerable progress had been made and capital expenditure incurred in the construction of the Indus Valley and Punjab Northern lines on a metre gauge standard.

Curiously enough the opinion of the Government of India had changed in the meantime. The Commander-in-Chief had some experiments carried out, and proved conclusively the great superiority of broad gauge lines for military purposes, so much so, that it was believed to justify not only the increased cost but also the expense involved in reconversion of the already constructed portion.[4] Affairs in Europe at the time, particularly the attitude of Russia

[1] Mr. Lee Smith, a former engineer of the Lahore-Rawalpindi section, claimed that he could construct light standard gauge line at the same cost as proposed for the narrow gauge.

[2] Mr. W. T. Thornton read a paper before the Institution of Civil Engineers and explained Government attitude.

[3] Despatch from Secretary of State, No. 54 Railway, dated 27th March 1873.

[4] Elaborate experiments in military concentration over the two kinds of lines were made by Quarter-Master General Colonel F. Roberts (afterwards Lord Roberts) in 1872-73.

caused great alarm about the proper security of the North West Frontier of India. Mr. G. Molesworth, the Consulting Engineer to the Government of India, and Col. Dickens, the Secretary, Public Works Department, now supported a lighter description of broad gauge line. It was their opinion that the evils of a break of gauge could be minimised only by extending the narrow gauge railways into one large system. If that was too remote or too difficult of attainment then it would be a mistake to construct metre gauge lines, particularly in the Punjab. Sir Richard Temple and Hon'ble Mr. B. H. Ellis, the Members in charge of Finance and Public Works in the Viceroy's Council, believed, however, that the evidence was quite conclusive in showing the ample capabilities of the metre gauge for all possible military requirements. If the Government gave way on that occasion the whole policy of the narrow gauge would be imperilled and a great financial disaster would follow. Lord Northbrook, the then Governor-General, held on the contrary, that as the Punjab lines were designed "entirely for military and political reasons" and as the consensus of military opinion was in favour of the broad gauge, the Government of India should have no hesitation in accepting the 5 ft. 6 in. gauge for those particular lines.[1]

The military aspect of the case was reconsidered in England by General Strachey and Major E. C. S. Williams. They did not think that the evidence conclusively proved the inadequacy of the metre gauge lines. The matter was brought before the Cabinet, and on its advice the Secretary of State declared that the inconvenience of break of gauge was much exaggerated and the additional expenditure of more than a million and a quarter, that would be required

[1] All these views were sent out to the Secretary of State in Despatch No. 140 Railway, dated 19th July 1873.

in case of a change, should not be incurred.[1] He left, however, an alternative to the Government of India, of adopting the standard gauge with a light 45 lb. rail, as suggested by Mr. Molesworth, if they considered avoidance of break of gauge so necessary from the military standpoint. The Sindh-Punjab and Delhi Railway agreed to carry out the necessary modifications to render the adoption of this light rail practicable on the Indus Valley line.

The Government of India thought that nothing short of 60 lb. rails on the standard gauge would satisfy the exigencies of the case, and pending a final decision a portion of the Punjab Northern line was completed in 1874, on the metre gauge, for temporary use. Early that year the Duke of Argyll sent his final word on the gauge question.[2] He held that there was not sufficient reason for departing, at considerable cost, from the careful and well-considered scheme of Lord Mayo's Government.

Gladstone's Cabinet resigned a few days afterwards, and Lord Salisbury took over the India Office portfolio. Immediately on resumption of office he telegraphed to Lord Northbrook not to take the last despatch of his predecessor as final.[3] A further memorandum from Colonel Roberts was then considered, and final decision was communicated in June, setting at rest the knotty question after four years of acute controversy.[4] Standard 5 ft. 6 in. gauge and rails were ordered for both the Indus Valley and Punjab Northern lines.

Constant and fruitful discussion arose also on the question of the proper gauge for other railway projects of the period. The Agra-Gwalior line was sanctioned on the

[1] Telegram to Government of India, dated 18th November 1873.
[2] Despatch No. 20 Railway, dated 16th February 1874.
[3] Telegram to Government of India, dated 21st March 1874.
[4] Lord Salisbury's Despatch to Government of India, dated 25th June 1874.

broad gauge at the request of the Maharaja Scindia, and on the representation of the Commander-in-Chief that it was of strategical importance. On the lower section of the Rajputana-Malwa lines the Government of Bombay contended, for a long time, for the adoption of the broad standard. In July 1874, soon after Lord Salisbury's decision on the Punjab lines, it again urged its views: "It is imperative that the Ahmedabad and Ajmere line should be laid on the broad gauge, if not so far as Ajmere, at least as far as the point which is best suited for the junction of any future Sindh extension." The Hon'ble B. H. Ellis had anticipated these moves and took up a strong attitude for the narrow gauge in Rajputana. The Minister of Baroda suggested that the section between Ahmedabad and Pahlanpur should be on the broad gauge, in consideration of the dangers of famine in Gujerat, and sanction was accordingly given, with the idea that this portion could be very conveniently worked by the B. B. and C. I. Railway Company, who had projected it long ago. The discovery was soon made, however, that under existing powers the Company could not work any line but its own. In January 1879, Government rescinded its previous order, and on various grounds of economy, military considerations, and convenience of working decided to construct the whole of the Rajputana-Malwa line on the metre gauge.[1]

The Mercantile community and the public of Bombay, the Bombay Baroda and Central India Railway Company, as well as Sir Andrew Clarke, the then Member in charge of Public Works in the Viceroy's Council, expressed their strong disapproval of this decision. The Government of India, however, stood firm and the Secretary of State, Lord Cranbrook, supported it. Thus it was that the break of gauge on Indian railways was given a final seal and it was

[1] Despatch No. 24 Railway, dated 24th January 1879.

determined to adopt a narrow gauge in the country for a secondary system of lines. The policy of State construction and the adoption of the metre gauge go hand in hand, and it was not until the revival of projects by private companies in 1882-83 that the gauge controversy was again re-opened.

Whatever may have been the evils due to this break of gauge in India, and certainly these have been many, the saving to the country by the introduction of the metre gauge is undoubted. "Had the standard broad gauge been insisted on throughout the country, many a district now prospering under railway communication, would, for many a year, have had to see its produce still carried by bullock carts over cross-country tracks, or have given up the attempt to compete with more favoured localities." [1]

VIII. Legislation (affecting Supervision, Control, Working, and Safety)

After the year 1871, when a short Act was passed covering the urgent matters of accidents, etc., the Government of India felt that it would not be sound policy to introduce any changes in the railway law of the country just at a time when the State was going to construct its own railways.[2] There was no great urgency in Indian railway legislation, because the Government was, under the contracts, possessed of large executive powers of supervision and control, both in working and in the determination of rates and fares. Many matters, which in other countries needed legal provisions, the Government of India could easily dispose of by circulars and resolutions. Moreover, the peculiar relation of the Government with the railway

Bell, Railway Policy in India, p. 186, Ch. IV.
Despatch No. 22 Railway, dated 27th January 1873, to Secretary of State.

companies on the one hand, and with the Indian States and the people on the other, made it difficult, in the first stages of railway development, to undertake any broad and comprehensive railway law in India. Benevolent autocracy was needed for the time being, and consequently legislation was allowed to remain in abeyance.

In 1875 an accident occurred on the Oudh and Rohilkhund railway, in which a village near the railway line caught fire from a locomotive engine. The Company was sued for compensation and it was discovered that the railways in India had no statutory powers to run steam locomotives. As a consequence the question of further legislation was re-opened.

In 1876 a bill was introduced in the Viceroy's Council, and after having received numerous comments and suggestions, it became law in 1879 as Act IV of that year. The previous Acts of 1854, 1867, 1870 and 1871 were repealed, and comprehensive legislation was provided for. The Carrier's Act of 1865 was declared no longer to be applicable to carriage by railway, and the provisions of the new Act were extended to the whole of India, including the "subjects of the Queen in Native States."[1] All kinds of "railway administrations," whether of the State or of Companies or of Indian States, were brought under the purview of the law. It was made lawful to use "locomotive engines or other motive power" provided that previous sanction of the Governor-General was obtained. An important clause was inserted, which required every railway to be duly inspected by a special officer, and declared safe for public traffic, before it could be opened for the conveyance of passengers. Railway administrations were empowered, as before, to frame general rules and byelaws for the working of a line, subject to the sanction of the

[1] Bell, Railway Policy in India, Ch. VI, p. 231, and Administration Report, 1879-80, pp. 64-72.

Governor-General in Council. The provisions under "offences and procedure" were considerably amplified, and rules were laid down for reporting accidents and defining their classification. Finally the Act gave power to the Governor-General to extend it or any portion of it to "any tramway worked by steam."[1]

At about the same time an Act of far-reaching importance was passed in Parliament enabling guaranteed railway companies in India and the Secretary of State to enter into agreements with respect to the working of railways and telegraphs, and conferring upon the companies additional powers with respect to their undertakings. This measure was felt necessary in consequence of the Companies being unable to work and manage other lines than their own, or to surrender or sell any portion of their undertakings or the telegraphs connected therewith.[2] The Act gave all these powers subject to the sanction of the Secretary of State, as also authority to work any ferry, to construct any bridge used in connection with the railways, and to supply the means of communication required for the convenience of traffic on any railway. This enactment was perhaps prompted by, or was indicative of, the change in the attitude of the Home Government, in the meantime, towards the use of private enterprise in the field of Indian railways. The further introduction of companies in a new form came into effect, largely as a consequence of these powers conferred.

IX. Rates and Fares[3]

The era of State-construction was opened with promises to reduce rates and fares on Indian railways and to simplify

[1] Bell, Railway Policy in India, Ch. VI, p. 232.
[2] Juland Danvers' Administration Report on Indian Railways, 1878-79, p. 10.
[3] For details *vide* S. C. Ghose's Monograph on Indian Railway Rates, 1918.

the classification of goods. Lord Mayo's government considered it a "blind policy," both from a financial standpoint as well as with regard to the well-being of the country, to adhere to high rates and to sanction enhancements.[1] The important events of 1869-70, the linking up of the East Indian and Great Indian Peninsula Railways at Jubbalpore, and the opening of the Suez Canal, offered a great stimulus to both the inland and foreign trade of the country, and the demand for some uniformity in the tariff was keenly felt. The local governments retained at the time powers of detailed supervision. Under modified contracts with the old guaranteed companies the Government of India obtained extended powers of control. These were now used with a view to effect simplicity and uniformity in the rates and fares.

As soon as the first sections of State lines approached completion, the Government of India proposed to the Secretary of State to simplify the classification and rates for goods.[2] Four classes were recommended both for passengers as well as for goods, with a fixed rate of charge for the section between two contiguous stations, irrespective of the distance. The lowest class rates and fares were to be considerably less than those which were in operation on the guaranteed lines. It was observed that "it is solely to the lowest class of passenger traffic that we can look for profit in coaching," and the really important question was "what shall be the fare in the lowest class henceforth." The Government thought that the lowest class fares and rates at that time in force were not sufficiently attractive to draw traffic. In India "it would be unwise to impose such rates as would remove the power of travelling from the great majority of the people. The true policy would seem to be

[1] Letter No. 115 Railway, dated 24th November 1869.

[2] Government of India Despatch No. 26 Railway, dated 29th January 1873.

to fix a rate, which, while leaving a margin of profit upon the cost of conveyance, would tempt the largest number to travel. The same remarks will apply to charges for goods,......it cannot be doubted that a large traffic at low rates gives a safer and steadier revenue than a small traffic at high rates. The lowering of rates will naturally produce a small loss at first, but an impulse is given to traffic, which, before very long, probably converts the loss into a gain."[1] A large amount of traffic was still carried by roads and rivers for fairly long distances, and the Government claimed that new lines should be given the benefit of such rates and fares as would be most beneficial to them as well as to the public.

With these observations the following lump sum rates and fares for any two contiguous stations were introduced on the State lines in 1873-74:

Goods per Maund		Passenger per unit	
3rd Class	8 annas	1st Class	8 annas
2nd ,,	6 ,,	2nd ,,	4 ,,
1st ,,	4 ,,	3rd ,,	2 ,,
Special ,,	2 ,,	4th ,,	1 ,,

In less than two years these rates were withdrawn and mileage rates were quoted.

The pressure to lower rates for certain classes of traffic, during the period, was also due to frequent visitations of famine. In 1873-74, when great scarcity developed in large areas in Bengal and the North-West Provinces, Government asked the East Indian Railway to convey grain to the famine-stricken area at specially reduced rates, itself making up the difference between existing rates and the reduced

[1] Juland Danvers' Administration Report, 1872-73.

ones. The results were remarkable. In five months during 1874 more than 544,000 tons of food grains were carried by that line alone, and unexpected profits were made in spite of reduced charges. 750,000 tons were delivered between Arrah and Rajmehal and "a dire calamity was prevented from attaining the proportions of a fearful catastrophe."[1] In spite of large profits earned by the railway the Government paid, under the arrangements made, a large sum representing the difference in the rates, and for the first time in the history of Indian railways some contribution was made to the State in excess of the guaranteed interests. The railway companies realised the mistake in the policy of maintaining the highest possible charges. Mr. A. M. Rendel had been engaged for some years past in studying the working conditions on the East Indian Railway with a view to effect improvements. Having prepared some statistics of passenger and goods traffic on the important lines and having noted their dependence on rates and fares, he demonstrated, that with certain improvements in working and, with judicious management, the cost of transport could be reduced to about one-third of a penny per ton per mile. This would enable the charges to be reduced to half the then average on all lines, assuming that the quantity of goods would increase proportionately.[2]

The Government of India pressed the companies to adopt a bolder and more liberal policy of rates and fares. Various changes and reductions were thereupon introduced and experimented with in the next few years. It was found that, wherever lower charges were tried, the results were invariably satisfactory, both from the operating and the profit-earning points of view.[3] By the year 1876-77 the policy of moderately low rates for the staples of the country

[1] Huddleston, History of the East Indian Railway, p. 67.

[2] Note by Mr. Rendell to Administration Report, 1871-72.

[3] Administration Report, 1876-77, pp. 29-30.

was generally accepted by all the railway administrations, and it was hoped that its encouraging results would lead to a further extension of the policy. There were at the time five classes for goods, and special rates, lower than the lowest class charges, were quoted in exceptional circumstances, for long-distance conveyance of the staples of the country, such as grain, seeds, coal, rice, and salt.

As regards passengers there were only three classes provided up to 1860. In the following year the G.I.P. Railway added a fourth, and the practice was thereafter followed by the Eastern Bengal, Oudh and Rohilkhund, Madras, and Sindh-Punjab railways. The State railways adopted the same practice in 1872-73. Where the fourth class was provided the fares varied between 2 and 4 pies per mile per passenger (1 pie=⅛ penny at the time). Intermediate class, named as such, between the second and the third was first introduced on the East Indian Railway in 1870. The E. B. R. accepted this new nomenclature soon afterwards, and many of the other lines followed. In 1874 the Oudh and Rohilkhund Company reduced its classes to three, the lowest class fare being 2 pies per mile. The Madras Railway made experiments with different day and night fares between 1870 and 1874. The G.I.P. and E.I.R. occasionally ran special "coolie" trains with very low fares.

By 1879-80 third class passenger traffic was proved to be very elastic in demand. It was observed, therefore, that "the object should be to attract the largest numbers and yet leave a margin for profit between the cost of conveyance and the amount received."[1] On the Madras Railway the 2 pies rate was substituted for 3 pies in the lowest class in 1879, but six months afterwards the Oudh and Rohilkhund Railway increased its fare from 2 to 2½ pies

[1] Juland Danvers' Administration Report, 1879-80, p. 39.

per mile. On the transfer of the E. I. Railway to State ownership in 1879 the Government proposed to reduce the fares on that line, and much against the will of the Agent the third class fare was lowered, in 1881, from 3 to 2·5 pies, with immediately beneficial results.

The policy with regard to rates and fares during the period under review, proves what great responsibilities were undertaken and keen initiative displayed by the Government of India, in their regulation. There was complete absence of competition between the railways and other means of transport except at a few riverside points, and the unconditional guarantee of a fairly high rate of interest stifled all initiative on the part of the private companies. The public were quite ignorant and inarticulate. The absence of competition left the railway administrations satisfied with a poor state of operating efficiency, and except in few cases, little efforts were made to improve the working with a view to reduce costs. The railways were still drawing heavily from the Government on account of the payment of guaranteed interest and losses in working. One cannot fail to admire, in view of these serious obligations, the boldness and foresight of the Government of India in steadily and systematically insisting upon and making experiments with lower and lower rates and fares.

It must not be forgotten, however, that the Government of India had to some extent been influenced by the demand in England for the reduction of Indian rates. In the "forties" and "fifties" of the last century England was crying aloud for the cotton of India, and the importance of the railways for the supply of that raw material was emphasised. In the "seventies" and "eighties" the demand was made for the cheap supply of Indian wheat for the markets of Europe. The American railway rates were much cheaper and consequently those interested in the

export of wheat from India raised a cry for a special rate for it.[1]

It is difficult to judge how far the insistence of the Government to lower rates, particularly for the conveyance of the staple raw products and food materials of the country, was due to a genuine desire to see the development of internal trade and provision for equal distribution amongst the provinces, or was prompted by a policy of effectively developing the resources of India for increasing her exports. The development of foreign trade had naturally engaged greater attention at the time, because, it was very necessary to effect a balance of payments as between the import of capital and materials for railways and other industries into India, and the export of goods in liquidation of these. As the import of capital from England for the construction of Indian railways was the only way to obtain the necessary capital supply, the Government of India was prompted to stimulate the production and export of those articles for which India was then found to be fit and for which England had a demand. This had caused much adverse criticism. Reporting with satisfaction the growth of traffic in 1876-77 the Government Director in England observed: "The stimulus which has been given to the grain and seed trade between India and this country may be seen in the fact that while in 1871 the wheat exported from India to the United Kingdom was 248,522 cwt., and oilseeds 1,384,023 cwt., in the twelve months ending last March the export of wheat to this country were 4,337,208 cwt., and of oilseeds 3,740,362 cwt."[2]

Towards the end of the period under review the most important event of the time, affecting rates and fares, happened, when the Rajputana-Malwa State line was opened,

[1] Juland Danvers' Administration Report, 1876-77, p. 28.

[2] Indian wheat *vs.* American protection, 1883.

bringing about a shorter connection between Bombay and Agra and Delhi. An era of inter-railway competition with the inevitable war of rates followed until the Government of India was called upon to intervene. This is dealt with in Chapter V, Section XI.

In concluding this section it will be of interest to note the rates and fares in operation on the important lines in India for the highest and lowest classes during the two typical years of 1876-77 and 1880-81. The great bulk of traffic, whether in goods or in passengers, was carried at the lowest charges. About 97 per cent of the goods and 96 per cent of passengers were in this category. On some lines, while the lowest class of goods was put down at 8, 9, 10 and 12 pies per ton per mile, there were special rates as low as 4, 4½, and 5 pies or from ·45 to ·62 *d*. per ton per mile. These applied principally to coal, grain, and seed, the traffic in these articles embracing the most useful and lucrative part of the business of the railways.[1]

J. Danvers' Administration Report, 1879-80, p. 37.

Railway.	Year.	Per Passenger per mile.		Goods per ton per mile.		
		1st Class.	3rd class.	Highest class.	Lowest class.	Special class.
		Pies.	Pies.	Pies.	Pies.	Pies.
1. E. I. Ry. Main Line	1876	18	3	27·22	9·073	4·537
	1880	18	3	27·22	9·073	2·722
2. G. I. P. Ry.	1876	18	4	48	10	5·5
	1880	18	4	48	10	5·5
3. Madras	1876	18	3·5	36	10	5
	1880	18	2	36	10	4
4. B. B. C. I.	1876	15	3	40	10	8
	1880	12	3	42·34	10·08	8
5. S. P. D. Ry.	1876	18	3	27·22	9·07	6·8
	1880	12	2·25	27·22	9·07	6·8
6. S. I. R.	1876	8	2	54	12	6
	1880	18	2	54	12	4
7. E. B. R.	1876	12	3	49·31	9·79	4·40
	1880	12	3	24·61	8·95	7·97
8. O. R. R.	1876	9	2	27·22	6·80	5·40
	1880	9	2·5	27·22	6·80	4·53
9. Rajputana...	1876	9·89	2·11	27·20	13·49	7
	1880	10·83	2·02	26·17	12·40	9·73
10. Punjab Northern	1876	9·32	1·74	20·96	10·48	5·45
	1880	13·68	1·80	27	9	7

[1] C^mpiled for Administration Reports 1876-77 and 1880-81 (1 pie = $\frac{1}{8}$ Penny).

CHAPTER IV

STATE CONSTRUCTION AND ADMINISTRATION

(Management and Control, Progress of Work, Results, Miscellaneous, 1869-82)

1. Management, Control, and Classification

The management of the railways in India had from the beginning been left in the hands of local Agents of the Companies. These acted under the direct guidance of the Boards of Directors in England, subject only to such supervision and control as was exercised by the Government. The inner organization of staff was modelled on the British departmental plan.

The State exercised its control through various consulting engineers attached to each provincial government. A chief Consulting Engineer with the Government of India looked after co-ordination of work and uniformity in policy, as far as was then felt necessary.

When the policy of State construction, together with greater financial responsibility of the Central Government, was adopted, the need for more centralised control became imperative. In 1870 it was proposed that the local consulting Engineers should all come directly under the Government of India. A consulting Engineer for State Railways was appointed.[1] The provincial consulting engineers, who were placed under the Government of India the following year, were asked to exercise a measure of supervision over

[1] The first incumbent was Sir Guildford Molesworth, to whose energies the success of the State Railways was largely due.

the new State lines, in addition to their duties of supervising the guaranteed railways within their jurisdiction.[1] For purposes of construction and working, the different projected lines were divided into suitable lengths and areas, and were placed in charge of Superintending Engineers, corresponding to the Agents of the guaranteed companies.[2] The work was further divided into "districts" or "divisions" of 50 or 60 miles in length, on each of which was a Divisional Engineer with assistants. Construction was undertaken generally by the engineers directly with the help of petty local contractors. A few of the big engineering works were entrusted to English firms of reputation.[3] A Deputy Controller for each line was responsible for the accounts and financial management. Both the engineers and the controllers were directly under the orders of the Supreme Government, which acted on the advice of the Consulting Engineer for State railways and of the Accountant-General. The stores were obtained on requisition from England under orders from the Secretary of State in Council, through the Stores department of the India Office, advised by an inspecting officer and a consulting engineer in England.

These arrangements were not destined to continue very long, for as State railways developed rapidly it became necessary to separate railway administration from the work of the Public Works Secretariat. In January 1874, a State Railway Directorate was formed.[4] The Chief Consulting Engineer was associated with him for technical assistance. All important matters affecting policy and financial administration were to be referred to the Railway Branch of the

1 Government of India Resolution No. 1883-1901 Railway, dated 29th September 1871.

2 Administration Report, 1871-72, and J. S. Trevor's Report on State Railways, 1879-80, pp. 78 and 257.

3 Bell, Railway Policy in India, p. 103.

4 Col. E. C. S. Williams was the first Director of Indian State Railways.

Public Works Department. Certain lines were permitted for convenience to remain under the charge of local authorities, subject to the direct control of the Government of India Public Works Secretariat. These included the Northern-Bengal State lines and the Nizam's State Railways.[1]

As the volume of work increased the method of control was further modified. In 1877 the State railways were divided into three systems—the Central, comprising Rajputana, Holkar, Scindia, and Neemuch railways; the Western, including Indus-Valley, and the Punjab-Northern lines; and the North-Eastern system covering the State lines under direct control in Bengal and Assam. Each of these was placed under a Director, and a further Director of State Railway Stores was appointed. The Provincial Railways in Burma, Central Provinces, and the North-Western Provinces were, however, left in charge of the respective Local Governments.

As many of the lines were nearing completion, in 1879, it was realised that the working of traffic could not be efficiently undertaken by engineer officers, more suited for construction. The administrative control of an extensive mileage open to traffic, together with considerations of economy in the State railway staff for which the Secretary of State was insistent at the time, rendered a further change necessary. In the management of open lines the division of work on a territorial basis under several Railway Directors did not work well, although it was an efficient system for construction. In September 1879, the offices of Directors of the Central and Western systems were abolished, and their work was allotted to the Government consulting engineers for the neighbouring guaranteed railways. Corresponding to the Director-General for Posts and Telegraphs, a Director-General for Railways, both State

[1] J. S. Trevor's Reports on State Railways, 1879-80, Section II

and guaranteed, was appointed, and the office was combined with the then Deputy-Secretary in the Public Works Department, Railway Branch, to whom some of the administrative powers of the former Directors were entrusted. The Consulting Engineer for State Railways was associated with the Director-General, for inspection and technical advice, while the Director of Stores similarly dealt with materials, rolling stock, and establishment. The accounts work was entrusted to the Accountant-General, and soon afterwards a Director of Traffic was appointed to deal with traffic problems.

Government control and supervision of the guaranteed railways continued to be exercised through local consulting engineers. There were five such officers at the time, stationed at Bombay, Madras, Calcutta, Lucknow, and Lahore. The first two were controlled by the Government of those Presidencies, while the last three were under the immediate orders of the Government of India. Lines in Burma still remained in the hands of the Local Administration, and the Residents in Hyderabad and Mysore retained powers of supervision over lines in those Indian States.

Local Governments had, by this time, been taking greater direct responsibility for the provision of railways within their own jurisdiction. In several cases they were permitted to borrow and to guarantee, out of their own revenues, interest on capital for the construction of State lines of local interest. Such lines were left to the local governments for supervision, under the general control of the Government of India.

Of the lines open to traffic the supervision was arranged in 1881-82 as follows :

(*a*) Director-General of Railways :—Imperial State Lines of Scindia, Punjab-Northern, Indus-Valley and Kandahar railways.

(*b*) Government of India (Railway Branch of the P.W.D) :—East Indian, Eastern Bengal, Oudh-Rohilkhund, and Sindh Punjab and Delhi railways.

(*c*) Government of Madras :—Madras, and South Indian railways.

(*d*) Government of Bombay :—G.I.P. (including Dhond-Manmad and Berar State lines), B. B. and C. I., Rajputna, Western Rajputana, Holkar and Scindhia-Neemuch, Bhabnagar-Gondal, and Gaekwar's railways.

(*e*) Government of Bengal :—Calcutta and South Eastern, Nalhati, Northern-Bengal, Tirhoot, and Patna-Gya lines.

(*f*) Government of North-Western Provinces and Oudh :—Muttra-Hathras, Cawnpore-Farukkabad, and Dildarnagar railways.

(*g*) Central Provinces Government :— Wardah Coal and Nagpore-Chhattisgarh lines.

(*h*) British Burma Government :—Rangoon and Irrawaddy Valley Railway.

(*i*) Resident at Hyderabad :—Khamgaon, Amraoti, and Nizam State lines.

(*j*) Resident at Mysore :—Mysore State railways.

For lines under survey and construction a modification of the above arrangements was made as found suitable.

For purposes of financial administration the railways of India were classified in 1881-82 into two main groups, namely, the Guaranteed railways, and the State railways. The East Indian Railway, which was purchased by the State in 1879 and was left to the Company for management, formed a special class under the heading "State lines worked by Company.' The various new companies, that had at the time been formed, with a change in the policy of the Government, were termed. "Assisted

Companies," the nature of assistance being different for different lines.

The State railway were again classified under three heads: (*a*) Imperial State, (*b*) Provincial State, and (*c*) Native State railways.[1]

II. Progress of Construction

The direct ownership of railways by the State in India dates back to the 1st April 1868, when the Calcutta and South Eastern Railway was surrendered to the Government under the terms of the contract. Shortly afterwards two small lines, the Amraoti and Khamgaon branches, of 5½ and 7½ miles respectively, were constructed in 1870 and 1871. In the latter year the Nalhati-Azimgunje branch was purchased by the State from the Oudh Railway Company for £30,000. The policy of State construction was thereafter adopted, and extensive projects were at once undertaken, the more important being the Indus-Valley, Punjab-Northern, Rajputana-Malwa, and Burma railways. Surveys for most of these lines had been in hand for some years. Certain Indian States and Provincial Governments also entered the field as encouragement was given to them, and for the next ten years the extension of lines in various parts was vigorously carried on. Some delay in progress was caused on account of the long-drawn-out battle of the gauges, but from 1875 the development had gone on unchecked. A map of the railways in India, open and under construction in 1881-82, is attached to give an idea of the growth of the railway network. This can be compared with a similar map given in Chapter II, showing Indian railways up to 1868.

[1] Trevor's Report on Indian State Railways, 1879-80, pp. 111-12.

From 1869 to 1881 the total mileage of railways in India increased from about 4.265 to 9,875 miles, the average increase being 468 miles per annum, compared with nearly 250 per annum of the previous period. The highest addition during any one year was in 1878-79, when nearly 900 miles were added. Of the total length opened up to 1881, Companies' lines, including the East Indian Railway, accounted for 6,132 miles, Indian State lines aggregated 446 miles, and the remaining 3,297 miles were Imperial and Provincial State lines. Of these about 7,000 miles were on the broad gauge, and a little less than 3,000 miles were on narrow gauges, including about 60 miles of Gaekwar's 2 ft. 6 in. gauge, about 50 miles on 2 ft. gauge of the Darjeeling-Himalayan, 28 miles on 4 ft. gauge of the Nalhati branch, and the remainder on the metre gauge.

Some of these lines, particularly those for famine protection, such as the Tirhoot, Dhond-Manmad, Baroda, and Patna-Gya railways, as well as the lines opened in connection with the campaigns through Afghanistan, namely. the Punjab-Northern and the Kandahar railways, had been constructed as temporary lines in great haste.[1] They had subsequently been strengthened, consolidated and completed.

Towards the close of the period more than 2,000 miles of new lines had been sanctioned and were under construction. The more important of these were the Nagpore-Chhattisgarh, Southern-Mahratta, Bengal-Central, Northern-Bengal, Assam-Behar, and Rangoon-Sittoung-valley lines.

Simultaneously with the progress of work under State construction, substantial additions and extensions were also made by the old guaranteed companies. In the South the amalgamation of the Carnatic and Great Southern of India companies into the South Indian Railway, effected in 1873,

[1] In 1879-80, 133·5 miles of Sukkur-Quetta railway between Ruk and Sibi were laid in 101 days.

with a decision to construct lines on the metre gauge, gave a great impetus to railway development. Nearly 375 miles were added by the South Indian Railway alone, and the Madras Railway added about 185 miles. These extensions were of immense service during the acute famines of 1876-78. About 500 miles of new lines were constructed, during the period, by the Oudh and Rohilkhund Company in the north, and the Great Indian Peninsula Railway added more than 400 miles. Extensions were also made by the other companies. A chord line of the East Indian Railway (now the Main line) was constructed in 1871, shortening the distance to Upper India by nearly 170 miles, and opening up the valuable coal area in Bengal and Bihar.

This period also saw the completion and inception of some of the biggest bridges in India, which have had far-reaching effects on railway transport. The pontoon bridge at Howrah, facilitating access to Calcutta from the terminus of the East Indian Railway, was commenced in 1870, and finished in 1875. Shortly afterwards the proposal for connecting the Eastern Bengal Railway with the East Indian at Naihati was reopened, and the Hooghly bridge was decided upon in 1881. Commenced two years later, it was opened to traffic in March 1887. The bridge over the Ganges at Benares, connecting the Oudh and Rohilkhund Railway and the East Indian Railway was sanctioned in 1879, and completed in 1887. The bridge over the Indus at Attock was also in rapid progress.

A few words about the damages caused by flood, delaying the progress of work, will not be out of place. Scarcely a year passed without reports of bridges being washed away or lines being damaged through rush of water. Not one of the railways in any part of the country escaped entirely. At times these damages caused traffic or construction to be suspended for months together. In 1874-75 Mr. Juland Danvers reported: " It had unfortunately become almost a

regular task each year to describe the disastrous effects of rains upon railways." The chief causes of failure were insufficiently deep foundations in some places and "inadequacy of water-way."[1] The pecuniary losses, apart from loss of life and stoppages of work, were often very large. On the Eastern Bengal Railway alone, construction, which had cost upwards of a million pounds, was washed away by the Ganges, at Goalundo, in one year. On the Indus-Valley line several miles of railway were swept away in 1879 and the railway embankment had to be cut to save the crops. The total damage was estimated at about a quarter of a million sterling.[2]

In 1875 Mr. Juland Danvers visited India and inspected the railways. He found that the existing lines were generally in good condition. Alignments, in some places, might have been better, and the works had at places been unnecessarily massive and expensive. On many lines sufficient waterway was not provided, bridges had been insecurely built, and their foundations had been undermined by the tremendous force of floods. These, however, were, in his opinion, "mostly errors inseparable from vast operations of a novel character in an unknown country. Taking the railway system of India as a whole, it cannot but be regarded as a triumph of human industry and skill."[3]

Apart from extensions of old guaranteed lines, the new railways opened during the period under review and the agency by which they were constructed are given in the following table[4]:

[1] Administration Report, 1874-75.

[2] The danger of flood-damages continues to cause anxiety even to the present day (1929).

[3] Administration Report, 1875-76, p. 9.

[4] Compiled from Annual Administration Report, 1881-82.

Railway.	Agency.	Gauge.	Year, 1st Section opened.	Mileage up to 1881.
1. Punjab Northern ...	Imperial State	5′ 6″	1875	355
2. Indus-Valley & Kandahar	,,	,,	1878	653
3. Sindhia ...	,,	,,	1878	75
4. Patri ...	,,	,,	1873	22
5. Dhond-Manmad ...	,,	,,	1878	146
6. Rajputana-Malwa ...	,,	Metre	1873	1,116
7. Patna-Gaya ...	Bengal Provincial	5′ 6″	1879	57
8. Northern Bengal ...	,,	Metre	1877	254
9. Tirhut	,,	,,	1874	85
10. Dildarnagar-Gazipore ...	N.W. Provincial	5′ 6″	1880	12
11. Muttra-Hathras-Achnera ...	,,	Metre	1875	53
12. Cawnpore-Farukkabad ...	,,	,,	1880	86
13. Wardah Coal ...	Central Provinces	5′ 6″	1874	46
14. Nagpore-Chhatisgarh ...	,,	Metre	1880	98
15. Rangoon-Irrawaddy ...	Burma State	,,	1877	161
16. Nizam's State ...	Indian State	5′ 6″	1874	121
17. Bhavnagar-Gondal ..	,,	Metre	1880	192
18. Mysore	,,	,,	1881	58
19. Gaekwar's State ...	,,	2′ 6″	1873	60
20. Darjeeling Himalayan ...	Private Company	2′	1880	49

From the above it will be found that Imperial State accounted for nearly 2,400 miles, Provinces about 852 miles, Indian States nearly 430, and a newly created assisted company about 50 miles.

III. Capital Outlay, Costs, and Financial Results

It is difficult to determine exactly the total amount of capital actually spent on the State and guaranteed lines in

India, because in the earlier stages the system of accounting was very imperfect and the expenditure upon the different branches of public works was not accurately shown under separate heads. The cost of land and other preliminary expenses, including those on first surveys, were hardly ever reckoned. On the other hand, the purchase of old guaranteed railways at a premium unduly weighted the capital at charge. The diversity in the financial arrangements, and the decentralisation in the financial accounts, increased the complexities. Above all, the losses in exchange and alterations due to changing values of the Indian rupee make comparisons almost impossible. It is therefore often found that in the Government Administration Reports for different years amounts are shown which do not agree with one another.[1]

The total capital expenditure up to 1881 was shown in the Parliamentary Administration Report of 1881-82 to be about £134 million, as follows[2] :—

Guaranteed Railways	£67 million.
East Indian Railway	£32 ,,
State Lines	£32 ,,
Native State Lines	£ 2·6 ,,
	£133·6 ,,[3]

The guaranteed companies added between 1868 and 1881 about £20 million and the State raised nearly £35 million. Of the total State expenditure, however, nearly

[1] Compare figures for Capital outlay given in Parliamentary Report, 1881-82, by Juland Danvers, p. 23, Administration Report, 1881-82, by F. S. Stanton, Appendix, F.F. p. ccxxxiii, and Parliamentary Select Committee Report, 1884, Appendix, p. 556.

[2] Up to 31st Decr. 1881, for State lines, and up to 31st March 1882 for Company's lines.

[3] Parliamentary Report, 1881-82, p 18; amount stated in Select Committee Report, 1884, is different.

two-fifths were swallowed up by the strategic lines in the Punjab.[1]

The average cost of construction in the period under study, compares very favourably, with those of the previous period. The experience gained during the earlier years had of course largely brought about more economical construction, but a great deal of the credit is due to the State's direct activities. The average cost of constructing a mile of broad gauge line, by the guaranteed companies, was estimated at about £13,000, while some lines required £20,000 and even more. The average for State broad gauge lines was only £10,000.[2] The metre gauges cost only about £6,470 per mile. The Indian States had a much better average of £8,800 and £3,800 only for the two gauges respectively. The cheapest line constructed was that by the Gaekwar of Baroda on a 2 ft. 6 in. gauge, with little over £2,000 a mile. The highest cost paid during the period was about £15,428 per mile for the Punjab-Northern State line. Had there been no change in the gauge after construction was well started, and had there been less hurry in completing the line to meet the emergencies of Afghan campaigns, the expenses for State lines would have been much lower.

The financial results to the State had, on the whole, been slightly encouraging, during the period 1870 to 1882, although the State lines did not come up to expectations. Lord Lawrence and Lord Mayo enunciated the principle that extensions should be undertaken with due regard to the earnings from old lines, so that the total burden on the State, in any year, might gradually be relieved and not

[1] Trevor's Administration Report on Indian State Railways, 1879-80, p. 15.

[2] From figures given in Administration Report, 1914-15, these costs may be worked out at about £15,972 for Company-managed, and £10,894 for State lines per mile, up to the end of 1879.

enhanced. Judged from this standard some progress was achieved, for while the net charges on the State in 1870 amounted to more than a million and a half sterling it was gradually and steadily brought down to a little more than £200,000 in 1881-82.[1] The State lines were comparatively new, and they covered much less productive fields. The older guaranteed railways had, on the other hand, achieved a normal state of progress by the time. It could not therefore be expected that the earnings of the former would come up to the level of those of the guaranteed lines. Moreover, the position of the different lines varied widely, and many of the older lines obtained substantial assistance from the newly constructed feeders. The percentage of net earnings on capital expenditure on the important lines was as under, in the year 1881 [2] :—

I. Company-managed lines.		*II. State-managed lines,*	
East Indian	9·65	Burma	5·04
Eastern Bengal	9·46	Patna-Gya...	4·87
Bombay Baroda & C. I. ...	6·55	Rajputana-Malwa ...	3·94
Great Indian Peninsula ...	6·28	Northern Bengal	3·63
Oudh & Rohilkhund ...	3·12	Tirhoot	3·43
South Indian	2·72	Punjab-Northern	0·85
Scind Punjab & Delhi ..	2·55		
Madras	1·81		

On the whole, the Companies' lines yielded an average return of 6·20 per cent on capital, while the State lines yielded only 2·15 per cent. The strategic lines of the Punjab-Northern, which comprised nearly one-third of the total mileage of State railways, were mainly responsible for the poor average on State lines.

Taking all the good and bad lines together, the net

[1] Report of the Select Committee, 1884, Appendix, p. 707.

[2] J. Danvers' Parliamentary Report, 1881-82, p. 28.

earnings yielded slightly over 5·3 per cent on the total capital outlay in 1882, as against 5·1% in the previous year.

The average gross earnings per mile per week fluctuated largely from time to time. The variations are typified by the figures for some years during the period under review as given below [1]:—

1869	... Rs. 277	1877	... Rs. 318
1873	... Rs. 244	1878	... Rs. 269
1882	... Rs. 294		

During the twelve years ended 1881-82, the State incurred a net loss of nearly £15 million, exclusive of interest and losses due to exchange. The net receipts of the railways from 1870-71 to 1881-82 amounted to about £44 million while upwards of £59 million had to be paid for interest and annuities.[2] The only year in which the State received a small surplus was 1877-78, when, following an unusually heavy famine and war traffic in grains and materials, about half a million pounds were obtained as the net profit to Government.

A few words should be said about the losses due to the falling value of silver during the period. Attention to this disquieting factor was drawn in the previous period. Under the system of accounts kept by the Government of India at the time, all losses on exchange were debited together under a separate head, and it was estimated that from three to four million pounds had to be paid out of the revenues of India on this account. The old contracts with guaranteed companies provided for a fixed rate of exchange for all transactions. As a result the Government had to bear almost the whole of the losses due to the fluctuations in the foreign exchanges. In the earlier era capital was flowing to

[1] Administration Report, 1907, p. 40.

[2] Acworth Committee Report, 1921, Appendix No, 3.

India, and the rates were higher, but the position was reversed when money had to be paid out from India for guaranteed interest and surplus profits.[1] The loss by exchange increased the capital charges borne by the State, and for every rupee spent by the old companies in India, the Government lost one to two annas ($6\frac{1}{4}$ to $12\frac{1}{2}$ per cent).[2] It is very doubtful how far this loss on capital was counterbalanced by a comparatively lower annual guarantee payments, which might have been rendered possible as a result. In any case, the operations had caused an unjustified hiding of a portion of the capital at charge on Indian railways. This blunder committed in the early period of railway development took many years to rectify.

IV. Working and Traffic Results

The operating ratio of all Indian lines taken together had much improved in 1882 over that of 1869, being a little less than 50 per cent compared with 55·74 in 1869 and 48·6 in 1859.[3] Of the State lines the highest working expenses were incurred on the Punjab-Northern, where the operating ratio was 89·54, the lowest being 52·39 on the Northern-Bengal line. For the Companies' lines the highest was 69·76 on the Scind-Punjab, and the lowest was 31·84 on the East Indian Railway. The working expenses of the Punjab lines were so high

[1] Juland Danvers' Parliamentary Report, 1876-77, p 27.

[2] Evidence of Major Conway Gordon, Parliamentary Select Committee, 1884. Q. 4295.

[3] These figures which are obtained from Administration Report, 1907, p. 40, are slightly at variance with those given in Danvers' Parliamentary Report of 1868-69.

because the heavy war traffic overwhelmed the limited resources in stock and staff and forced the railway to borrow equipment and men at ruinous cost.[1] The rent of stock borrowed was included under working expenses, while interest on capital outlay for increased rolling stock would not be so regarded. The operating ratio of all the State lines together was 69·71 as compared with 45·34 of the Company-managed railways. The earnings per mile per week of the two systems were Rs. 282 and Rs. 288, respectively.[2]

Great efforts had been made during the period to improve the conditions of working on different railways. From 1871 onwards Mr. Rendell of the East Indian Railway compiled comparative statements of average rates charged, work done, and costs of working, on the principal Indian lines, and these statistics were of great help in bringing about numerous economies. The East Indian Railway was the best managed line in many respects and had special facilities of access to cheap fuel. The worst worked lines for many years were those in the Punjab.

In 1881 the best passenger traffic was found on the Eastern Bengal Railway with 1,523 passengers per mile per diem while the best goods traffic was on the East Indian Railway with 1,756 tons per mile per day. The worst in both respects were the Madras and South Indian Railways. The best average passenger-train load was 334 persons on the Oudh and Rohilkhund Railway, and the worst was on the Rajputana and Great Indian Peninsula lines with about 170 persons only. The best average goods-train load was 168 tons on the East Indian, and the worst was 51·5 tons on the South Indian Railway. On the whole, there was a

[1] Trevor's Report on Indian State Railways, 1879-80, p. 25.

[2] Compiled from Administration Report, 1881-82, Appendix FF.

tendency towards an increase in goods traffic, together with a diminution of working expenses.[1]

As regards the comparative working results on the broad and narrow gauges, the experience of the period showed, that the average metre gauge railway was capable, with a traffic proportionate to its carrying capacity, to compete, on virtually equal terms, with an average broad gauge line. The principal advantage in favour of the former was the smaller prime cost. It was believed, that after sufficient development, the average cost to the public would be the same, irrespective of the gauges, and the average profits from the working would yield approximately equal returns on the capital embarked. A comparison on the working of principal railways of the two gauges, in 1881-82, may be made asf ollows:[2]

[1] The following selected statistics of work and costs on the E I R during 1871 and 1881 are of interest, showing the achievements of the period:—

			Year 1871,	Year 1881
(1)	Average	Passenger-train load (numbers) ..	206	273
(2)	,,	Goods ,, ,, (in tons) ...	109	168
(3)	,,	Cost of running a train one mile ...	3·69s	2·86s.
(4)	,,	Passengertrain-mile receipts ...	6·54s.	8·49s.
(5)	,,	Goods ,, ,, ,, ...	11·33s.	10·24s.
(6)	,,	Charges for carrying a passenger a mile	·38*d.*	·373*d.*
(7)	,,	Cost of carrying a passenger a mile ...	·215*d.*	·125*d.*
(8)	,,	Profit from carrying a passenger a mile ...	·165*d.*	·248*d.*
(9)	,,	Charge for conveying one ton of goods a mile	1·24*d.*	733*d.*
(10)	,,	Cost of conveying one ton of goods a mile ..	·406*d.*	204*d.*
(11)	,,	Profit from conveying one ton of goods a mile	·834*d.*	·529*d.*

Compiled from Mr. Rendell's Statistics appended to Parliamentary Reports, 1872 and 1882.

[2] Compiled from Stanton's Administration Report, 1881-82, p, 19, and p. clxiv.

		Average of Principal Lines.	
		Broad Gauge.	Narrow Gauge
1.	Mean Mileage worked in 1881 Miles	6,820	2,467
2.	Earnings per mile (sundries excepted): Coaching Rs.	5,139	2,945
	Goods ... Rs.	12,456	4,161
3.	Expenses and interest per mile Rs.	16,908	7,624
4.	Working expenses per mile ... Rs.	8,139	4,400
5.	Cost per 1,000 freight ton-miles Rs.	119·51	149·60
6.	Percentage of freight upon capacity hauled ..	44	50
7.	Proportion of freight moved per mile to gross weight moved.	1 : 3·44	1 . 3 79

The two principal narrow gauge lines of the time were the South Indian and the Rajputana-Malwa railways. The former worked by a company yielded only about 2¾ per cent, while the latter, under State management, brought in a net income of nearly 4 per cent on the capital expenditure.[1] The average costs of running a train-mile were 3·5 and 2·7 shillings, respectively, on these two lines, while the highest and lowest costs on the broad gauge were 4·32 *s.* on the Eastern Bengal, and 2·86 *s.* on the East Indian Railways. The conditions of working were so largely different that no definite conclusions can be drawn from these figures about the comparative efficiency of State and Company managements.

A few detailed statistics of working of the broad and narrow gauge lines, in the half-year ending 1881, are given below to enable a more thorough comparison to be made between the two systems.[2]

[1] Stanton's Administration Report, 1881-82, p. ccxxxiii.

[2] Compiled from Appendix, pp. 799 to 817, Report of Select Committee, 1884.

	All Broad gauges.	All Narrow gauges.	East Indian Railway. Best 5'6" line.	Rajputana line. Best metre gauge line.
1. Passenger-miles (millions) ...	978	263	308	92
2. Cost of haulage per Passenger-mile (in Pies)	1·27	1·38	0·77	1·42
3. Goods Ton-miles (millions) ...	2,802	291	1,174	143
4. Cost of haulage of one ton per mile (in Pies)	3·75	6·15	2·19	5·46
5. Freight per cent of gross weight moved. Coaching ...	7	9·7	7·7	8·3
6. Ditto Goods ...	37	35	43	36
Train-miles (in millions)—				
7. Coaching	4·9	1·3	1·3	·57
8. Freight	8·7	1·9	2·9	·90
9. Train-load, (average Vehicles)—				
Coaching	17·32	19·15	19·03	17·89
Goods	26·67	21·61	31·14	21·99
10. Average No. of Units conveyed—				
Passengers per train ...	199·3	198·5	236·8	159·6
Freight (tons) per train ...	120·2	54·6	173·6	58·3
11. Average load of Goods Vehicles (inclusive of Loaded and Empty) tons.	4·76	2·61	5·79	2·75

The Gross Receipts from all sources amounted in 1881 to about £13¾ million and the operating expenses were nearly £3¾ million. The receipt from passengers amounted to slightly above £4 million, from merchandise nearly £9 million, and the rest came from miscellaneous.[1] A large part of the freight income was due to the conveyance of grains and cotton. The proportion of coaching and goods revenue to total earnings varied greatly from one line to another, because the conditions of working and the country served were largely different. Thus, while on the G. I. P. Railway, the proportion of coaching and

[1] Danvers' Parliamentary Report, 1881-82, pp. 60-61.

freight incomes were 19·84 per cent and 78·80 per cent, respectively, of the total revenue, these were 56·87 per cent and 40·74 per cent on the South Indian line.[1]

Of the passengers carried only 1·39 and 1·74 per cent were in the first and second classes, respectively, nearly 98 per cent being of the lowest class.[2]

The most important commodities conveyed, and those in which there had been remarkable increase in traffic, were cotton, hides, jagree and sugar, tea, rice, salt, oilseeds, wheat, piece-goods, and tobacco. The quantity of merchandise, exclusive of minerals, conveyed by railways increased from about 2·5 million tons in 1870, when the mileage was 4,775, to more than 11·5 million tons in 1881, when mileage had increased to nearly 9,875. The following table shows the enormous rise in India's foreign trade from 1860-61 to 1881-82, following upon increased railway mileage.[3]

Year.	Railway Mileage.	In Million Sterling.		Total Exports and Imports (Merchandise).
		Value of Imports (Merchandise).	Value of Exports (Merchandise).	
1860-61 ...	840	23·5	33·0	56·5
1865-66 ...	3,373	29·6	65·5	95·1
1870-71 ...	4,475	34·5	55·3	89·8
1875-76 ...	6,519	38·9	58·1	97·0
1880-81 ...	9,325	50·3	74·5	124·8
1881-82 ...	9,875	62·1	75·9	138·0

The great part played by the railways was reflected not merely in increased traffic and trade, but also in a

[1] Stanton's Administration Report, 1881-82, p. clxvi.

[2] Danvers' Parliamentay Report, 1881-82, pp. 60-61.

[3] Compiled from Danvers' Parliamentary Report, 1880-81, p. 59, and 1881-82, p. 61.

general all-round improvement in the finances of the Government of India. The indirect benefits to the State which Lord Dalhousie emphasised had largely accrued, and in spite of direct financial losses on railways the position of Government had much improved.

From 1869-70 to 1881-82 the total revenue of the State rose from £51 million to about £74 million. Land Revenue increased from £18 million in 1860 to £20 million in 1870 and £22 million in 1880. The income from salt duty rose from a little less than £4 million in 1860 to about £6 million in 1870, and upwards of £7 million in 1880, in spite of a reduction in the rates.[1]

An idea of the growth of particular traffic can be had from a study of the imports of piece-goods and iron and steel and the exports of wheat and seeds from India, during the period. These are noted below :[2]

	Piece-goods imported Million Yds.	Iron and Steel imported Thousand Tons.	Wheat exported Thousand cwt.	Seeds exported Thousand cwt.
1869-70	928	90	78	4,380
1881-82	1,646	131	19,901	10,483

Similar advances were made in many other directions. The economic importance of India to Great Britain was established in the large supply of raw materials and food products to England, following upon the shortage of supply from America and Russia. The export of coal from Bengal had also commenced during this period. In 1873 coal was conveyed from Calcutta by sea to Madras, Bombay, and Singapore, and thereafter an important traffic grew up.[3]

[1] Compiled from Appendix No. 5, p. 595, Report of Select Committee, 1884, and from Danvers' Parliamentary Reports.

[2] The figures are at variance in most cases.

[3] Huddleston, History of the East Indian Railway, p. 69.

The benefits to the people of India from the opening of the railways came to be more and more realised. Larger number of people engaged themselves in trade and commerce. The stimulus of high prices induced the cultivators not merely to substitute wheat for less remunerative crops, but also to extend cultivation and to improve crops generally. In 1884 the Parliamentary Select Committee recorded that the annual benefit to the people of India, accruing from the construction of railways, amounted to from 30 to 40 million sterling.[1]

V. Miscellaneous (Railway Conference, Accidents, Staff, Feeder Roads, Statistics)

As railways developed various miscellaneous problems began to engage attention. The need for securing some agreement amongst the railways for uniform working and exchange of experiences was most urgently felt. With this end in view the first Indian Railway conference was convened by Government in 1871. Competent officers of the Government Railway Department and representatives from the railway companies met together, and important decisions were arrived at regarding the construction and working of rolling stock, particularly, the interchange of goods wagons and the use of joint passenger stock for through trains on the trunk lines. The speed of passenger and mail trains was limited to 20 miles per hour, and the block "line clear system" was recomended for train-signalling. Certain measures for securing the comfort of the travelling public were agreed to, including the locking of carriages and provision for communication between the guard and the passengers.

[1] Report of the Select Committee, 1884, pp. vii and viii.

In 1876 a second and more representative conference was contemplated but extreme pressure of work, brought on during that year and several years thereafter, on account of famines and the Afghan War, rendered a postponement necessary. A minor conference met early in 1879, to dispose of certain pressing questions on the interchange of rolling stock, and on the draft Railway Bill, which subsequently became law in July. As soon as conditions improved, in January 1880, the first General Conference of properly selected delegates from the guaranteed as well as State railways was convened. The new Director-General of Indian Railways presided. A code of general rules was agreed to for the working of all lines. Certain difficulties in the interchange of rolling stock, overlooked by the previous conference, were removed, and a committee was appointed to revise the system of compiling and presenting Statistics on a uniform basis. A general agreement was arrived at for recording and charging shunting and other locomotive service. A uniform measure of weight of the standard Indian maund (82·29 lbs.) was approved for adoption on all lines. Discussions also took place on framing a uniform goods classification for the whole of India, as well as on the establishment of a central Railway Clearing House. These proposals, however, were then rejected.

As regards accidents the position had greatly improved during the period, but yet much was left to be done. Numerous accidents were caused by collisions and flood-damages, and the number of cattle run over was still appalling. In 1881, the total number of persons iklled and injured were 365 and 629 respectively, including railway servants. The casualties amongst railway employees were very large. Of the passengers the total of killed and injured was 1·4 per million pesons carried, the average distance travelled by each being 48 miles. Following the practice in England, the Government of India had always been watchful

of accidents on the railways. In 1880 rules were framed and directions were issued for the guidance of railway officers, police, civil officers and the Government inspector, in all cases of serious accidents.

Of the persons employed in 1881-82, Anglo-Indians and Europeans were nearly 3,770 each, and Indians were upwards of 162,000 in number. The Indians formed about 95·6 per cent of the railway employees but hardly any position of authority was held by them. The subject of employing local people as engine-drivers and firemen received continued attention, and the great satisfaction that they gave was recorded from time to time. In 1871 Mr. Juland Danvers remarked: "Of the hindrances to Indian railway enterprises one is the necessarily expensive nature of that portion of the working staff which is filled by Europeans. To train and educate natives to perform the duties now allotted to Europeans is an important object to keep in view in connection with the subject of economical reform."[1] Steps were thereafter taken to establish certain schools for mechanical training, and by 1882 some progress was made, although comparatively slight. The results obtained were remarkable. In 1876-77 it was noted that "the native drivers and shunters appear to give more satisfaction than the guards." They were "strongly built men and smart and intelligent."[2] During five years ending 1880-81 a saving of more than £150,000 was made, in wages alone, through the employment of a few Indian drivers and shunters.

The provision of hill-schools for the education of the children of European and Anglo-Indian employees was urged in 1876-77 by the Government Director in England. Great assistance was given by the Government for such

[1] Juland Danvers, Parliamentary Report, 1870-71.
[2] Danvers, Parliamentary Report, 1876-77, p. 14.

schools, and by 1882, new schools were established and arrangements were made with some existing institutions at various places. The East Indian Railway hill-school at Mussorie was established out of a balance of about Rs. 3,50,000 left over in the savings bank and fine funds at the time of purchase of the line by the state in 1879. The school was opened in 1888. Supplementing Government activities in the spread of education, the railways also established a few schools in the plains for Indian employees and their children.

In 1880, following upon the purchase of the E.I.R., a State Railway Provident Fund was instituted for the benefit of the staff. Europeans were required to contribute up to one-sixteenth and the Indians up to one-thirty-second part of their salary to the fund. The state contributed to it a half of one per cent of the net profits until such profits were $4\frac{1}{2}\%$ of the capital outlay, a bonus of one per cent being paid thereafter. The amount was to be distributed in proportion to the compulsory contributions of the depositors. Voluntary subscriptions carrying interest at $3\frac{3}{4}\%$ were also accepted in addition to the deposits.

Following this arrangement the previous practice of allowing pensions to state railway servants was abolished in March 1881.

Volunteer corps were formed of the European and Anglo-Indian employees on the railways, and these constituted important additions to local forces. The system of railway police received some attention towards the end of the period under review. On the recommendation of a committee on that subject in 1872, the entire force of law and order, as well as for watch and ward, was placed under the control of the Assistant Inspector-General of Railway Police, the Agent having a limited voice in their allocation and employment. In 1882 certain alterations in the administrative control was effected.

One of the most important matters that received the continued attention of the Government was the provision of feeder roads to the railways. From time to time local governments and administrations were urged to make adequate provision for facilitating communication between railway stations and the great emporia of trade and commerce. Much was, however, left to be done in this respect for want of funds.

In 1877 an important step was taken by the Government when it took over the telegraph system from the railways, leaving only such wires to them as they required for their own working purposes.

With reference to the revision of Statistics, the important part played by Mr. A. M. Rendell in drawing the attention of the Indian Railways to the importance of collecting statistics of work and costs has been noticed.

The system of collection and tabulation adopted by him was based upon the American plan, and in consultation with Mr. Juland Danvers and General Strachey, it was first introduced on the E. I. Railway in 1870. Gradually the same method of measuring costs and work was extended to other railways. The purpose was to find out from year to year the exact cost of carrying a unit of traffic a ton-mile or a passenger-mile. The plan was to collect weekly traffic returns and to sum them up every six months, and to compare them with the working expenses of that period.

Remarkable improvement on the working of the railways had followed as a result of these statistical enquiries, and in 1883, Mr. Rendell claimed that the E. I. Railway was worked at a cost lower than any other railway in the world. The cost of a passenger-mile was one-eighth of a penny and of a ton-mile only a quarter of a penny.

In 1880, after discussion in the Railway Conference, a committee was appointed under the chairmanship of Col. J. G. Medley, to standardise and revise the forms and

returns for the statistics of Indian railways. The committee proposed some additions and modifications of the existing forms, with a view to make the statistics more useful and at less cost. It was recommended that the summary of statistics should be separated into two parts, part I dealing with Revenue Accounts and part II with working results. Station traffic returns were simplified and yearly returns of general results, with comparative figures for the previous five years, were to be recorded.[1] These recommendations were adopted in 1881-82.

[1] Report of the Committee for the Revision of Statistics of Indian Railways, 1880.

CHAPTER V

REVIVAL OF COMPANIES (1882-1902)

1. *Introductory*

The policy of State-construction did not bear fruit to the expectation of the Government of India. Exigencies of the time necessitated the diversion of a substantial portion of the capital resources of the state to the construction of military and strategic lines on the North-West Frontier.[1] This was done regardless of cost and commercial prospects, and the State lines were burdened with a large amount of unproductive capital.

Meanwhile, between 1874 and 1879, the country was visited by acute and widespread famines. Protection was urgently called for and the directions in which the State should extend its activities in order to make a repetition of such disasters impossible were recommended by the Famine Commission of 1880. The comparative merits of irrigation and railways, in the prevention of famines, were examined, and the great importance of the latter was emphasised. It was estimated that the country needed at least 20,000 miles for protective purposes, and an immediate addition of not less than 5,000 miles was urged. The Commission was strongly of opinion that the policy of railway extension on borrowed capital should not be abandoned, so that "nothing might stand in the way of a very early return to the former scale of grants for that paramount object." [2]

1 Of the total construction of 3,297 miles by State agency between 1869-1881, the Punjab-Northern, Indus Valley, and Kandahar lines, which were mainly strategic, accounted for 1,008 miles. The average cost of construction per mile was about Rs. 1·5 lakhs.

2 Report of the Famine Commission, 1880, p. 170.

The Government of India was highly impressed with the demand of the Famine Commission, but was at a loss to find the requisite capital, in view of the depleted condition of its resources and the rigid restrictions placed by the Secretary of State on borrowing for railway purposes. Important schemes of famine-protection lines were projected and a controversy between the Government of India and the Secretary of State followed on the question of relaxation of the powers of borrowing. It was out of this that a new policy of re-seeking the aid of companies was shaped, after a period of experiment and adjustment, between 1880 and 1884.

The Government of India soon realised that without some form of local or private assistance it would be impossible for it to carry out its projects, and in June 1880, it proposed that cheap light lines should be constructed on separate financial responsibility of provincial governments.[1] An experiment was made in this respect, and two months later the Darjeeling Steam Tramway Company opened its first section, with no other assistance from the State than the grant of land and a guarantee, out of provincial revenues, of a total gross income of £20,000.

Opinion in England had been developing definitely against State-management in the meantime. During 1878-1881 an important enquiry was carried out in Italy by experts, both local and foreign. The outcome of this was a definite declaration in favour of private management of the railways. The Committee thought that it was a mistake to assume that the State could do most of the services cheaper than the companies. Moreover, in addition to being, as it was said, more costly, State-management was very liable to political dangers. Politics would corrupt railroad manage-

[1] Despatch No. 184 Finance of 8th June 1880.

ment and the railways would corrupt politics.[1] The examples of Great Britain and America, together with the unencouraging financial results of the State lines in India, strengthened the conviction of those in England of the desirability of introducing company management even apart from considerations of capital supply.

This feeling against State-management had its influence on the Secretary of State. In 1879 when the State purchased the East Indian Railway, Lord Salisbury decided that " it is desirable to entrust the construction and working of railways to companies in preference to a State Agency."[2]

II. Purchase of the East Indian Railway

As marking a new departure in the field of Indian railways, by which the aid of private companies was solicited for the management and working of State-owned lines, the purchase of the East Indian Railway deserves greater attention. It will be remembered that this Company refused, in 1870, the Secretary of State's terms to modify the old contract in consideration of postponement of the purchase. After the expiry of the first 25 years, therefore, the Government exercised its right of purchase in 1879, and a new agreement was entered into, with the Company, for the management and working of the lines after the purchase. The debt against the Company arising out of the advances for guaranteed interest was cancelled. The average price of stock was taken at £125 for every £100 of nominal share, on the basis of the market price during the three previous years, and the purchase price was

[1] The Italian railways were thereupon leased out, in 1885, to two big companies on a 60 years', terminable lease.

[2] Evidence of General Strachey before the Select Committee, 1884, Q. 55.

determined at £32·75 million for a capital outlay by the Company of £26·2 million.[1] Government preferred to pay the amount in 73 years, by annuities at the rate of £5 12 *s.* 6 *d.* for every £125. To accommodate trustees, who could not accept payment by annuity, four per cent Government of India stock was issued. A certain portion of the annuities was deferred, and holders thereof formed a new company, with the old name, for purposes of the management of the railway. One-fifth of the total capital outlay was to be held by the new company in these shares which were guaranteed 4 per cent interest. On termination of the management the holders of these shares would receive up to February 1953, the annuity of £5 12 *s.* 6 *d.* for every £125 held. Over and above the guaranteed interest on its portion of the capital, the company would receive one-fifth of the surplus profits, the remaining four-fifths going to the State in proportion to the share of capital. The payment of the guaranteed interest and surplus profits was to be calculated at the current rate of exchange, instead of at 1*s.* 10*d.* as was fixed in the former contract. Thus the State secured to itself a large share of the profits, while leaving the management of the railway to the company which had so successfully administered it in the past. A change in the railway policy was hereby foreshadowed.

The step then taken has been subjected to much criticism by Indian public men. It may be recognised, however, that the financial embarrassment due to famines, war, fluctuating exchanges, and increased administrative expendi-

[1] Referring to the payment of premia to guaranteed companies General Strachey said: "Under the system of what you may call sham private enterprise the companies get a monopoly, and at the end of a series of years, if they are called upon to sell their property, which has attained an artificial value by reason of the monopoly that they get.........it is unreasonable that they shall receive a very large premium on their investment." Q. 22, p. 4, Evidence before Select Committee, 1884.

ture of the years 1878-1880, would have daunted the staunchest advocate of State-management.

III. The New Policy in the making (1880-1884)

The Secretary of State, Lord Hartington, reviewed the entire position, in September 1880, and again in January following. He agreed that the time had come when it was necessary to re-enlist private enterprise in support of the State undertakings. He therefore thought that although "up to the present time no companies have been found willing to undertake the construction of railwavs without a guarantee,......an endeavour should be made to encourage the raising of capital through private agency, on the exclusive security of the success of the undertaking."[1] In the event of this being found impracticable a modified guarantee "so restricted in respect of time and the rate of interest guaranteed as to give the subscribers a real interest in the efficient and economical administration of the railway," might be offered.

As to State undertakings out of borrowed money, it was laid down that such railways should be constructed only on "commercial principles," that is to say, provided they would, within five years after opening, return 4 per cent on the capital outlay including the interest borne during construction.

Lord Ripon now assumed the Viceroyalty of India and launched into a more vigorous policy of railway extension. The annual outlay of £2½ million for "productive" public works, to which the State was restricted, was declared to be wholly inadequate, and it was hoped that some of the projects could attract private capital, particularly English,

[1] Despatch to Government of India, No. 1 Financial, dated 6th January 1881.

without a guarantee, or at all events "with a minimum amount of such aid." [1] As to State management, it was argued, that "the interests of the public do not necessarily demand that the State should create an artificial monopoly in its own favour," and the necessity for State interference ceases with making provision for proper supervision, control of rates and fares, of gauge and other standards, and a conditional right of purchase after the lapse of a certain period. The State, it was held, should be contented with the indirect benefits, and if the profits of the railways were "left to fructify in the pockets of the people," they would be more advantageously employed, and there would be less risk of the State spending them in unproductive expenditure.

A few months later the Government pointed out that under restrictions placed on its borrowing for "productive" works, as well as on its total expenditure on railways, it was practically allowed no more than fifty lakhs of rupees (£500,000) annually for such lines which could not be classed as "productive," but which were nevertheless urgently required for famine protection.[2] The adoption of a policy of allowing "safe and reasonable guarantees," was therefore proposed, to attract private enterprise for the construction of such lines without dangerous delay. The guarantee was to be limited in amount and duration according to the varying circumstances of each case, and was to be charged on the sum set aside for "famine protective" works. As regards the lines with reasonable financial prospects, it was expected that they would be undertaken by private companies with only slight encouragement from the State.[3]

[1] Financial Statement of the Government of India, by Sir E. Baring, 1881-1882. This gave expression to the views of the Government at the time.

[2] Despatch No. 92 Ry., dated 22nd July and No. 113 Ry. of 24th September 1881.

[3] Despatch No. 92, Ry., dated 22nd July 1881. The Hon'ble Rivers Thompson,

The Secretary of State insisted that private enterprise should not be based on a guarantee but should rely "on the exclusive security of the success of the undertaking," and only lines other than productive could be undertaken by the State.[1] It happened that the Financial outlook in England was then not unfavourable to this optimism.

But the Government of India was not so hopeful. It had in view the following conditions: That the Government should determine the direction of the lines, give land free for 99 years, allow interest on capital during construction, make up the earnings to a certain percentage, retain powers over rates and fares, and secure the right of purchase, together with a share of the surplus profits, in view of the advances made. In the matter of seeking private assistance once again, both the Secretary of State as well as the Government of India were in agreement.

As a consequence of different views held in England and in India at the time, four systems of encouraging private enterprise grew up, and were reflected in the contracts entered into between 1881 and 1883, with the Bengal-Central, Rohilkhund-Kumaon, Southern-Maharatta, and Bengal and North-Western Railway Companies.

In order to understand thoroughly the new policy inaugurated, it is necessary to study these four contracts a little more in detail, together with an indication of what happened to them in later years.

The Bengal-Central Railway Company was formed in London, in 1881, for the construction of lines in the lower Gangetic delta as surveyed in 1877-78. In the contract it

a Member of the Viceroy's Council, however, recorded in his Minute: "I should not be prepared to admit the wisdom of a policy under which the Government should make over all its carefully selected paying lines to private enterprise, and construct all the unproductive lines by State agency."

[1] Despatch No. 365 Financial, to Government of India, dated 8th December 1881.

was agreed that the Government would provide land free and would advance interest at 4 per cent on the paid-up capital, for the period of construction, not exceeding five years. The Company would repay, from a moiety of its surplus profits over 5 per cent, the amount of such advances with simple interest at 4 per cent. The Government might purchase the line after 30 or 50 years, paying in addition to the capital outlay a bonus of 25 per cent. At the end of 99 years the railway would lapse to the Government, if not previously purchased. The rolling stock would then be bought at a valuation.

The line did not prove so remunerative as it was anticipated, and the Government had to extend the time of the guarantee and ultimately to submit to a new contract with effect from 1885. The sum due for arrears of interest was cancelled, and following the plan of the Southern Maharatta contract, which will be seen presently, a sterling guarantee of $3\frac{1}{2}$ per cent was granted. The balance of net earnings, after payment of interest on advances by the Secretary of State and on debenture capital (but not share capital), was to be divided between the State and the Company in proportion of $\frac{3}{4}$ths to $\frac{1}{4}$th. The Secretary of State obtained a right to take possession of the line in 1905, or subsequently, at 10 years' interval, on repaying the Company's capital at par.

The Rohilkhund and Kumaon Railway Company was formed in 1882. The Company was guaranteed interest at 4 per cent during construction, and was to receive for 10 years thereafter a subsidy of Rs. 40,000 per annum. In consideration of the assistance given the Government was to receive half the surplus net profits over 6 per cent on the capital outlay. The Company, however, could not make such headway as was expected, and in 1891 the working of the Lucknow-Bareilly State line was handed over to it, as further assistance from the Government. Similar arrangements were made also with the Dibru-

Sadiya Company in 1881, in which the Government agreed to pay an annual subsidy equal to such sum, within a stated maximum, which would, together with the net earnings, yield a dividend of 5 per cent.

The Southern Maharatta Railway contract, entered into early in 1882, was essentially on a new basis, and formed a prototype for many subsequent engagements. The railway was to be State property, the Company's aid being invoked merely for working and construction, as an agency, under stringent conditions as to maintenance, supervision, and control of rates and fares. The Company had to raise the requisite capital of £5 million, for which the Secretary of State guaranteed interest at 4 per cent up to 1889, and at 3 per cent thereafter, to be paid out in India in rupee equivalent to a sterling guarantee in England. For the management of the lines, which was expected to be constructed by 1889, the Company would receive one-fourth of the net earnings, the remaining three-fourths going to the State and towards the payment of interest on guaranteed capital. The State had already undertaken the construction of a part of this railway system for famine-protection, and in view of this, the money loss to the Government in permitting the net earnings to be calculated exclusive of interest charges was accepted as necessary. The Company could at any time claim its money back on giving one year's notice, and the Government might terminate the contract by repaying the capital at par on the 25th year or on any subsequent tenth year.

Practically the scheme involved a permanent guarantee of 3½ per cent. It was a peculiar way of borrowing through the agency of a private company in order to evade the restrictions then placed on State borrowings for public works.[1]

[1] Evidence of General Strachey before the Select Committee of 1884.

On account of the liberal clause for the calculation of net earnings exclusive of interest charges, it was soon discovered that while the company was interested in keeping down revenue expenditure it had little inducement to keep capital expenditure in check. This defect was kept in view in the contracts subsequently entered into on a similar basis, and all interest payments were made a first charge on the gross earnings, before net earnings were determined.

The insistence of the Secretary of State on private enterprise, on the exclusive security of the success of the undertaking led to the formation of the Bengal and North-Western Railway Company in 1882, for the construction of a series of metre gauge lines on the north of the Ganges. The Company agreed to take up the work with no other assistance from the Government than a simple grant of land. The Company was allowed to include in its capital outlay the interest, during the period of construction, at the rate of 4 per cent per annum, on the sum *bona fide* paid up. The Secretary of State reserved the right of purchase, after 30 or 50 years, on payment of twenty-five times the average annual net earnings, calculated on the earnings of five years immediately preceding the purchase, reduced by one-half of the surplus profits over 6 per cent. It was at first arranged that one-half of the surplus over 6 per cent should go to the State, but this condition was abandoned in 1886. The Company fell into a bad way and the Tirhoot State Railway was leased out to it for management in July 1890. The Government thereafter received a share of the surplus net profits obtained from working the State section. Ever since the position of the Company has greatly improved. Instances of other such assisted companies receiving land only are the Barsi Light, Bengal Dooars Extensions, and Sahadhara-Saharanpore railways.

The four typical cases, in order of the nature of State assistance granted, were the Bengal and North-Western,

Rohilkhund-Kumaon, Bengal-Central, and the Southern-Maharatta Railways. It will be seen that in the first case no other assistance than the free grant of land was given. In the second the payment of a subsidy for some years, instead of any guarantee, was provided. In the third contract a guarantee for a limited period only was allowed, and in the fourth case the capital was guaranteed with a permanent low rate of interest. In the first three instances the property belonged to the Companies. They were left entirely free in the management and working of the lines. The Government reserved the right of purchase or ultimate lapse to the State, and such powers of supervision and control of rates and fares as would safeguard the interests of the public. Further, the advances for interest made, if any, during construction, were to be repaid out of surplus revenue in subsequent years. The Southern Maharatta Company, however, was to act merely as the agent of the Government in the construction and working of the railway, which belonged to the State from the beginning.

IV. Select Committee of 1884 and the Final Determination of the New Policy

In January 1883, the Government of India pressed the Secretary of State once more for some extension of its powers of borrowing and for financial arrangements that might ensure a more speedy development of the railways.[1] A complete reversal was asked for of Lord Hartington's policy which permitted State construction of only those lines likely to be productive. On the contrary, it was suggested that as a general rule the State should undertake those railways alone, which from

[1] Despatch No. 29 Financial, to the Secretary of State, dated 23rd January 1883.

their unprofitable character, in a commercial sense, could not be made by private agencies. It was feared that without such a step the lines most urgently required for famine relief would never be constructed within a reasonable time. A vigorous programme for the construction of about 4,000 miles of lines, involving a total expenditure of about £32 million, spread over five or six years, was urged. The projects were classified under two Schedules, A and B, those under A being considered as urgent and indispensable. Three agencies for construction were recommended, namely, that of the government, of constructing and working companies, and of private companies under limited guarantee.

The Government of India was not willing to discuss the principles on which railways were to be constructed in future. It accepted the position as it then was and wanted to examine the question from an entirely practical point of view. It was recognised that only with more extended attraction of private enterprise the state could secure the speedy construction of those railways which were urgently required for protection against famine. It was felt undesirable to increase state liabilities, which might involve enhanced taxation, particularly in view of an unstable standard of value, the precarious state of revenue, specially from opium, and the disturbed state of the North-west Frontier.

In replying to these proposals the Secretary of State agreed that some relaxation of the existing rules might be permitted, and declared his intention to place the whole question of Indian railways before a Parliamentary Select Committee early in 1884. He did not feel inclined to recommend any important changes in policy at the time, but observed that the proposals of the Government of India "for sudden expansion of operations" were too extensive and would involve the state in expenditure far beyond

what was contemplated even by the Famine Commission.[1]

In the meantime, the Bombay and Madras Chambers of Commerce, as well as merchants in England, had begun to agitate for a more rapid extension of the railways in India, particularly for the handling of the growing wheat traffic.

In two despatches, following the Secretary of State's reply, the Government of India emphasised that its new scheme involved no unjustifiable increase of expenditure, and the proposals were neither sudden nor excessive.[2] Sir T. C. Hope, Member in charge of Public Works, stated: "The profits of Indian railways should not, for a few years, be swallowed up in the general expenditure of the empire, but should be devoted in one form or another to that railway extension which the country so urgently needs for its protection from famine, the development of its external commerce, the counteraction of the fall of silver, and the general enrichment of its people." In short, he would let railways breed railways.[3]

The Secretary of State was not disposed to entertain any further discussion before the Parliamentary Select Committee had finished enquiries. In presenting its report in July 1884, the Committee found that the evidence in favour of a more rapid extension of the railways was conclusive, principally for protection against famines, stimulus to internal and external trade, opening up of fertile tracts and coalfields, and the numerous indirect benefits that accrued to the state and the people. The improved financial position of government and cheapness of material and labour at the time were noted as encouraging factors.

[1] Despatch No. 231 Financial, to Government of India, dated 16th August 1883.

[2] Despatch No. 269 Financial, dated 24th September 1883, and Despatch No. 27 Financial, dated 29th January 1884.

[3] Bell, Railway Policy, p. 39.

As regards the agency, it was considered desirable to employ both state and private enterprise. Time might come, it was observed, when new railways would be made by unassisted companies. This should be kept in view in all future contracts. So far as the terms of contract with the Bengal and North Western, the Bengal Central, and Southern Maharatta companies were concerned, each was suitable under certain conditions. But it was unnecessary to complicate them by provision of payment of rupee interest equivalent to a sterling guarantee, as was done in the last case. The provision for repayment of capital with one year's notice should not be permitted. Other modifications of the contracts were recommended, with a view to simplicity, greater publicity of affairs, expeditious carrying out of the terms, intelligible publication of accounts, etc.

Regarding state-construction, the rigid technical distinction between protective and productive railways could not be maintained, and therefore, railways of both kinds were urged to be made as required, whether they were technically one or the other. The entire removal of check on the construction of unremunerative lines was, however, not considered desirable, and it was expected that the bulk of the lines would be self-supporting.

The Secretary of State fully concurred with the tenor of the recommendations.[1] The technical distinction between "protective" and "productive" lines was relaxed and a further sum of £500,000 was permitted to be spent on "protective" or non-productive lines, out of borrowed money, over and above the usual grant from the Famine Reserve Fund, and from revenues. The Government of India was asked to find out which lines could be most advantageously handed over to companies, and it was urged that state operations should on no account, be extended

[1] Despatch to Governor-General, No. 89 Railway, dated 14th August 1884.

beyond the capacity of the then Public Works staff, against the increase of which the Committee had reported.

The attention of the Government of India had in the meantime been drawn to the need of a definite policy for the military railways on the North-west Frontier. The value of railway communication was amply demonstrated during the Afghan campaigns of 1878-79, but the bulk of borrowed money for state construction was being swallowed up by the frontier lines, leaving very little for famine lines in the heart of the country. Lord Ripon's government therefore proposed that the military lines, which were then estimated to cost about £5 million, be constructed out of a separate and distinct loan which should be discharged in 30 years by terminable annuities and a sinking fund. This decision was not, however, arrived at unanimously, and several Members of the Viceroy's council thought that the money for such railways should be found from the revenue of the state and not out of loans.[1] One Member said: "I myself think it exceedingly doubtful whether there is any such urgent need for the rapid construction of frontier communications as to compel us at present to have recourse to borrowing on that account."[2]

In communicating his final decision on the new policy the Secretary of State admitted the great necessity of providing for both the evils of famines and frontier-troubles.[3] It was his opinion, however, that no distinction could be made between the two clases of work, because, the rapidity with which either of the works could be proceeded with depended principally on financial considerations. The proposal for providing frontier railways, out of money specially

[1] Sir Auckland Colvin, Sir Stewart Bayley, and Mr. C. P. Ilbert.

[2] Secret Despatch No. 25, to the Secretary of State, dated 22nd September 1884.

[3] Despatch to Governor-General in Council, Railway No. 148, dated 27th November 1884.

borrowed for the purpose, was condemned, both on account of its causing an increased permanent charge on the revenue, as well as on grounds of impracticability. The need for restricting the sterling debts of the Government of India within strictest limits was once more emphasized.

The policy of companies' lines side by side with state lines was thus finally decided upon. The agency for construction or management was, however, to be determined as circumstances necessitated in each case, and, for many years following, the actual operations continued to be a little cumbersome. As a result, a complicated variety of working and owning agencies grew up. This was thus commented upon: "To sell a railway one day and buy another the next, to build a railway and then lease it to a company, and, at the same time, to take over another line on lease, these inconsequential proceedings are sufficient indication of the total want of a systematic policy and good judgment which has characterised the railway administration of the Indian Government."[1]

It was, however, claimed by Sir Theodore Hope that the lack of consistency arose "primarily out of practical difficulties and friction which were bound to ensue in cases where one railway administration possessed a line to the sea-board, but its continuation or extensions up-country were in the hands of another."[2] Thus the seemingly capricious vacillation between one agency and another was in reality all dictated by the same policy of expediency at the moment.

While admitting the difficulties referred to by Sir Theodore Hope, one cannot help thinking that the anomalies were in no small measure due to two makers of policy, one in India and the other in England.

[1] Chesney, Indian Polity, 1894, p. 311.

[2] Paper read by Sir Theodore Hope, 1890, Journal, Royal Society of Arts, Vol. 38, p. 724.

V. Working of the New Policy

It is difficult to explain in detail how the various types of agency came about after 1882, particularly how at times apparently contradictory arrangements were made by the state. Each case had to be determined on its own merits, and apart from the financial position which was the most potent determining factor, government was guided by three main considerations, namely, (*a*) the element of competition and rate war amongst different administrations, (*b*) the fall in the value of silver and consequent need for restricting sterling payments abroad, and (*c*) strategic and political importance of the administration of a line. The state in every case was anxious to own the railway property at the earliest opportunity, but except in the case of the North-Western Railway, it was not originally desirous of keeping the lines under direct state-management. In fact, negotiations had been more than once entered into and pressed for handing over to private management many of the lines that had been worked by the state for a long time. These fell through in some cases for want of terms sufficiently attractive to government.[1]

With the opening of the Rajputana-Malwa railway, in 1880, when the new element of inter-railway competition emerged, between the Great Indian Peninsula and the Bombay Baroda and Central India Railways, and of those with the East Indian Railway, the Government of India thought that state-administration of the Rajputana line could be utilised to check any tendency towards undue competition amongst the other lines. Considerations of the unfettered approach to the sea-board, however, led to the transference, in 1884, of the working of the Rajputana

[1] Evidence of Mr. W. Stantiall before Acworth Committee, 1920-21, Vol. II, p. 4.

line, to the Bombay Baroda and Central India Company. It was expressly declared that this step was in no way due to the recognition of the superiority of company management. In 1901, the working of the East Coast State Railway was distributed between the Madras and Bengal-Nagpore railway companies, for similar reasons.

Following upon the policy of re-introduction of private companies, steps were taken to entrust the management of various Indian state lines to English guaranteed companies, either newly formed, or already in existence in adjoining British territories. The Mysore state lines were handed to the Southern Maharatta Company in 1887, and the Nizam's Guaranteed State Railway Company, formed in 1883, took over in 1885 the working of the lines in Hyderabad. A section of the Mysore line then leased out has been received back by the Durbar for management, since October 1919. The Nizam railway contract provided for acquisition, working and maintenance of the existing lines as well as preferential right to construct all new railways in the Nizam's territories. Land was provided free of cost and the company's share of capital, as well as an amount of debenture capital, was guaranteed 5 per cent interest in sterling for 20 years. Of the surplus net earnings one half would go to the company and the other half was to be applied to pay off the guaranteed interest and other sums advanced by government. Government retained the right of purchase in 1934 or in 1954, and after all the sums paid out by the state, together with an interest of 5 per cent, had been re-imbursed, the company would be entitled to the whole of the net earnings. The guarantee of the share capital ceased in 1904, and that in respect of debentures terminated on various dates between 1904 and 1928.

Two important systems of lines, one from Nagpore towards the Bengal Coalfields and the other in the North-

western and Central Provinces from Jhansi to Manickpore with connections to Agra, Cawnpore, Bhopal, and Itarsi, had for a long time been felt of pressing importance. Government constructed a portion of the former, up to Chhattisgarh, on the metre gauge. As soon as a change in the policy was determined upon, negotiations were made to hand over the construction of these lines to private companies. Financiers remained obdurate for some time until government agreed to a permanent guarantee of 4 per cent, with terms modelled on the Southern Maharatta contract. The Indian Midland Railway Company was then formed, in 1885, and it took over the construction and management of about 700 miles of the Central Indian lines. The Bengal Nagpore Company was formed two years later, and it proposed to convert the Nagpore-Chhatisgarh section to broad gauge, and to extend it to Asansol and Calcutta.

The contracts of these two companies were similar. Government was the owner of the railway property, which the companies worked as agents. Unlike the Southern Maharatta contract, interest advanced by the Secretary of State was made the first charge on gross earnings, and the surplus net earnings were to be divided in the proportion of three-fourths to the state and one-fourth to the company. The guarantee was in sterling and the payments were to be made in India, the receipts of one full year, and not a half-year, as agreed in former contracts, were to be the basis of calculation. The state reserved large powers of supervision, audit, and control of rates and fares. The Secretary of State had the right to terminate the contract in 1910, in the case of the Indian Midland Company, and at the end of 25 years, in the case of the Bengal Nagpore Railway, on payment of the capital of the companies at par. The Indian Midland Railway was, in 1900, amalgamated with the Great Indian Peninsula

line under one management, and in 1910, the contract was terminated. The Bengal Nagpore Railway contract was renewed in 1913, and the first occasion for termination will be in 1950. In the present contract, guaranteed interest is 3½ per cent, and surplus profits are divided in proportion to the capital of each partner.

Along similar lines the Assam-Bengal Railway company was formed, and contract was entered into in 1892. The rate of guaranteed interest fixed was 3½ per cent for the first six years and 3 per cent thereafter. The surplus profits were to be divided between the Secretary of State and the company in proportion to the capital provided by each.

The state railways in Burma were handed over, in 1896, to the Burma Railways Company, for management, under almost the same terms. Interest was guaranteed in this case at the rate of 2½ per cent, and surplus profits were to be divided in proportion of four-fifths to the state and one-fifth to the company. Since 1908 the division was proportional to the capital held by each.

In every case government had a right to terminate the contract after a number of years on repayment of the capital of the company at par. The Assam-Bengal contract was terminable in 1921, but as the market value of the shares was much below par the Government of India postponed the exercise of its right until 1931. The Burma Railways Company's contract was terminated in 1928.

A few years after the new policy was inaugurated, the financial stress, due to exchange and other causes, became so great that the Government of India grew alarmed at the increase in sterling guarantees. The increasing burden threatened to render necessary the imposition of fresh taxation. In 1886, the Secretary of State feared that although the importance of railway extension was very great the advantages would be too dearly bought if

government was compelled to resort to increased taxation to meet its expenditure.[1] The Government of India thereupon decided to stop assistance to private enterprise until some system of encouragement, less burdensome to the state, could be determined upon.

In 1889, the Delhi-Umballa-Kalka Railway Company was formed and the determination of the government to avoid sterling guarantees took shape in a new kind of contract. Government found all land free of cost, and it was provided that on completion of construction the East Indian Railway would work the line for 50 per cent of the gross earnings (48% since 1895), the rolling stock being supplied by the working company. " In addition to the 2 per cent of gross receipts conceded in 1895, government further agreed, in 1896, to supplement the net earnings of the company by such an annual subsidy as would secure a 3¼ per cent dividend to the shareholders after payment of debenture interest. The contract was terminated in December 1926, and the purchase price was fixed at Rs. 4 crores by mutual consent, although the company was entitled to a somewhat higher sum.

In October 1889, the Government of India sketched out its programme for the future, and in view of financial embarrassments caused by the falling rupee, and the impossibility of obtaining English capital without a sterling guarantee, it contemplated that future operations would be carried out mainly by direct state agency.[2]

The Secretary of State generally approved the projects but reaffirmed the views of his predecessor about the employment of private companies. He declared: "It was expedient, as far as possible, to enlarge the scope afforded by railways in India for private enterprise, and

[1] Despatch to Government of India, dated 29th July 1886.

[2] Despatch from Government of India, No. 14 Railway, October 1889, as quoted in Bell's Railway Policy, p. 51.

thus diminish the burdens and responsibilities of the government, promote decentralisation, and encourage the spirit of emulation which would result from a variety of management."[1] A new method of attracting private enterprise was proposed, under which government would advance two-thirds of the share capital of a company out of a special sum of £10 million, raised on the authority of Parliament, the company finding the remaining one-third. The interest on the company's share capital would be the first charge on the net earnings.

The Government of India approved of the Secretary of State's suggestion to allot areas to each trunk line, so that extensions of railways might not multiply agencies; but such a procedure was fraught with great practical difficulty. As regards the new scheme of financing, government held, that such assistance would not secure the advantage of private enterprise, but would in fact amount to nothing short of a sterling guarantee in another form. It would expose government to claims on account of stoppage of work and would lead to financial difficulties in time of famine or war. The company would have a very limited interest in the concern, contributing only the smaller portion of the capital at a needlessly high rate of interest and yet enjoying almost absolute security. Rather than raise funds in this manner, the Government of India claimed, that it would be eminently better and safer to have its powers of borrowing extended.[2]

In November 1890, the South Indian Railway was purchased. In appointing the old company to work the line it was arranged that the company should raise a further one million sterling on condition that interest at the rate of

[1] Despatch from Secretary of State, No. 132 Railway, November, 1889, quoted in Bell's Railway Policy.

[2] Despatch No. 55, dated 25th March 1890.

$3\frac{1}{2}$ per cent would be the first charge on the net earnings. The second charge would be the same interest on government capital, and any surplus was to be divided in proportion to the capital subscribed. Government retained power to terminate the contract in 1945, or any succeeding tenth year, on repayment of the company's capital at par.

Referring to the arrangement with the South Indian Railway Company, the Secretary of State reaffirmed, that he was not disposed to discard the agency of companies, "on various grounds, some of them not less important than immediate financial considerations."[1] Hinting at the insistence of the Government of India for more favourable terms, it was said, that if private enterprise was to be confined to the terms upon which it might be impossible to negotiate, railway extension would be indefinitely postponed.

The Government of India repudiated the implication that it intended the exclusive employment of state agency, and stated that it did not desire to undertake more work than was necessary to secure adequate employment for its existing establishment. It was pointed out, however, that co-operation of companies might be obtained at too high a price, and in that sense, real private enterprise might not be secured.[2] The danger was aggravated, because, the fall in the sterling exchange value of the rupee had, by this time, become very serious.

Between 1889 and 1892, the progress of railway extension was so restricted that it seemed likely to be stopped altogether. But in 1892, "to the astonishment of the public and still more of the Government of India," the Assam-Bengal Railway contract was entered into, and the line "which was not urgently wanted, and which for two-

Despatch No. 16 Railway, dated 5th February 1891.
Despatch No. 107 of 14th October 1891.

thirds of its length cannot for very many years be of any practical value to the province, was sanctioned by the Secretary of State, under a sterling guarantee. The decision of the Home Government in this case must be regarded as a severe blow to the position taken up by the Government of India, *viz.*, to grant assistance to outside capital in no other way than by rupee guarantee on rupee capital outlay, and it intensified the feeling of doubt as to the good faith of the government."[1] The Assam-Bengal Railway contract was the outcome of the new scheme which the Secretary of State had in mind for some time past.

VI. Branch Line Terms, 1893-1896

Failing to attract private enterprise and capital, without sterling guarantee, the Government of India proposed, in 1893, to invite capital on a rupee basis, for the construction principally of branch lines.[2] The first offer was made in September 1893, but as it was found not sufficiently attractive, the conditions were modified in March 1895, and again in April 1896.[3] An important departure in the railway policy was effected through these terms.

The main terms of the proposals of 1893 were as follows :—Land was to be given free, surveys being made at state expense. Stores and materials would be carried by state lines at favourable rates. Rolling stock supply, maintenance, and working of the lines would be carried out by main line administrations at special rates, and a limited rebate from the main line earnings would be paid

[1] Bell, Recent Railway Policy, pp. 15-16. Paper before Royal Society of Arts, April 1898.

[2] The Deoghar, and the Tarkessur branches were constructed in 1881, and in 1883, by private companies with local capital.

[3] East India (Extension of Railways by private agency), Parliamentary Returns, No. 88 of 1897.

towards ensuring the proprietors of the branch lines a dividend of 4 per cent per annum, on an approved capital expenditure.

It was not the intention of government to grant to every case the maximum concessions, each project being examined on its own merits. No concession was to be agreed to unless a project showed reasonable prospect of success. Government was prepared to undertake construction on behalf of persons who would find the capital. The state would have the usual powers of supervision, control of rates and fares, and ultimate right of purchase.

With regard to branch lines from state railways, it was proposed that the maintenance and working of lines, of the same gauge as the parent line, should be undertaken on a fixed operating ratio determined by calculating the earnings and expenses of both the main and branch lines taken together. It was expected that ordinarily this would not exceed 50 per cent of the gross earnings of the branch line from all sources. The expenses would include the charges for the use of main line rolling stock, but would exclude the expenditure on the Home board directorate of the branch railway company. A rebate not exceeding 10 per cent of the gross earnings of the main line from interchanged traffic would be granted to the branch line company, if needed to make up, together with the net earnings of the branch, a dividend of 4 per cent per annum, on the actual expenditure in the capital account, in India, of the company. In case of railways not owned or worked by the state, government promised to endeavour to secure similar terms.

Government retained the right of purchase, on giving 12 months' notice, at the expiration of 21 years from date of opening and at successive intervals of 10 years, on payment of 25 times the average net annual earnings of the preceding five years, provided the price would not be below par and would not exceed capital expenditure by

more than 20 per cent. At the expiration of 50 years, the actual capital expenditure only was to be paid.

In March 1895, these terms were slightly modified, and the rate of dividend secured was brought down to $3\frac{1}{2}$ per cent. But the rebate was proposed to be paid to the full extent of the *net earnings* of the main line from interchanged traffic, and in calculating the net earnings, it was assumed that they would bear the same proportion to the gross earnings from interchanged traffic as the net earnings of the whole system bore to the gross earnings of the whole.[1]

In 1896, government cancelled the previous resolutions, as they were difficult to understand, and made fresh proposals, confining these to lines not exceeding 100 miles in length.[2] For more important railways and for mountain branches separate terms were to be provided in each case. The 1896 branch line terms were mainly the following :—

1. Branch lines would ordinarily be made by the main line administrations, who should have a prior right to construct them.

2. The gauge, route, moving dimensions, stations, etc., would be subject to the approval of government.

3. In addition to the free grant of land and results of surveys, together with the permission to include interest charges during construction in the capital account, the financial concessions would be in either of the following forms :—

(*a*) Government guarantee, out of the revenues of India, not exceeding 3 per cent per annum on actual capital expenditure, with such share of surplus net profits as might be agreed upon in case the net earnings of the branch were more than the guaranteed dividend; or

[1] Government of India, P W.D. Resolution, dated the 29th March 1895.

[2] Resolution P.W.D. No. 514 R.C., dated the 17th April 1896.

(*b*) The grant of a rebate from the net earnings of the main line through interchanged traffic, as determined in 1895, making up a dividend of 3½ per cent on the capital expenditure of the branch. The whole earnings of the branch railway would go to the branch company in case the earnings by themselves yielded 3½ per cent or more on the capital.

In either of the two alternatives the capital account was to be kept in rupees and the guarantee or rebate would be calculated on a rupee basis only.

4. Government reserved the usual rights of supervision, control of rates and fares, and of purchase at the end of 21 years, or at subsequent intervals of ten years, on giving 12 months' notice, and payment of 25 times the yearly average net earnings (excluding rebate payments) of the three preceding years. The price would not exceed 120 per cent and would not be below par of the capital cost on a rupee basis.

These terms had again to be modified in 1910, and in 1914.

The first railway constructed under the branch line terms was the South Behar line of which contract was entered into in August 1895. At the same time the Southern Punjab (main line) contract was also signed. Tapti-Valley and Ahmedabad-Parantij railways followed soon afterwards.

VII. Indian State Railways

The necessity for restricting sterling liabilities urged the Government of India to seek local capital, and, during the period under review, the financial assistance of Indian states and of local bodies was increasingly sought. Following upon the success of the first few Indian state lines, many princes came forward and undertook railway construction

and administration. Corresponding to the system developed in British India three distinct types grew up in the Indian States.

In the first place, some states found all the necessary capital, and undertook the construction as well as management themselves, or handed the work over to neighbouring main line companies. A few small states of this group formed a corporate managing agency, the construction being done on individual responsibility. Typical railways under this group were the Morvi, Bhavnagar, Jodhpore, Bikanir, Junagad, Gwalior, Baroda, Gondal-Porebunder, and Patiala state lines, opened at various dates, between 1873 and 1900.

A second group advanced money to the Government of India, at a specified rate of interest and a share of surplus profits, or on a guarantee of interest alone, with some special local privileges of travel and conveyance. The construction and management were left to be arranged by the British Indian Government, as in the case of the Holkar and Scindia Railways.

The third system was that typified by the handing over of the Mysore and Nizam state railways to private management. The states entered into direct or indirect contract with guaranteed companies, of English domicile, that undertook the management of existing lines and the construction and working of extensions. Capital was partly found by the states, on specified terms of interest and share of profits, and partly by companies, raising a portion in England on a guarantee of minimum interest, together with a share in the surplus net earnings.

So, with the change in the policy of the Government of India after 1882, a corresponding modification in the railway policy in the Indian states also took place. It has been

criticised that as the problem of financial stringency was not so acute in these states as with the Government of India at the time, there was no justification for introduction of private agencies there.

Two things stand out in the development of railways in the Indian states, namely, that most of these states went in for cheap light lines, and that they had to offer more attractive terms than in British India to obtain the assistance of private agencies or capital from abroad. Moreover, the pressure of various kinds on the Indian states somewhat prejudicially affected railway development in India.

VIII. Unassisted and District Board Railways

In the decade 1870 to 1880, some attempts were made to encourage railway extensions on the responsibility of local governments. In subsequent years some private parties undertook to construct short light lines, without any state assistance whatsoever, to develop local coal or distillery industries, or on the expectation of very substantial suburban traffic. The first of the kind was the Ledo-Tikak-Margherita Colliery Railway, constructed in 1883 by the Assam Railways and Trading Company, for carrying coal to the Dibru-Sadiya Railway, belonging to the firm. Land was leased for the railway, mines, and premises, on a fixed rental and royalty on the output of coal, government reserving the right of purchase in 1931. The Bengal Provincial Railway Company was formed in 1890, to construct an unassisted line joining Tarkessur and Mogra near Calcutta. Land was acquired by the Government of Bengal, at the cost of the company, a small portion being supplied free for an extension to the river. The district board of Hooghly retained the right of purchase after 21 years, or at subsequent intervals of 7 years, on payment of 140 per cent of the original capital

outlay. The Jagdhari, Kulasekharapatnam, and Trivellore light railways were also constructed in later years on a similar plan, the total capital spent by absolutely unassisted companies up to 31st March 1928, being only about Rs. 40 lakhs for a total length of a little more than 77 miles.

The Port Commissioners' railways, which have of late years been left out of consideration in the annual Railway Administration reports, may receive a passing reference here. The first of this kind of line was constructed in Calcutta in 1875. Bombay followed 40 years later in 1915. The total mileage was only about 19 miles in 1919, up to which year figures are obtainable in the railway reports.

With regard to district board railways, Madras Presidency took the lead. The government there permitted the district boards to levy a special cess, solely for the construction of railways.[1] The district board of Tanjore was the first to avail of the opportunity for the construction of a line, from Mayavaram to Mutupet, which had good prospects of passenger traffic. The capital raised by the board, however, fell short of the requirements and the Government of Madras had to advance half the money. A railway guarantee fund was created in later years, by the district board, out of a special levy of 3 pies in the rupee on all land cess raised locally,[2] and therefrom the advance was paid off in 1900. The railway has since been entirely financed and maintained by the district board, out of its own resources, or of debenture loans guaranteed by itself. The line is worked by the South Indian Railway for the same percentage of gross receipts as is expended on the whole system, together with 5 per cent of the gross earnings for the use of rolling stock, cost of any damage affecting the branch, and interest on the

[1] Under Sec. 57, clause ii, of Madras Local Boards Act, 1884.

[2] Authorized under Madras Local Boards Act of 1900 with the concurrence of the Government of India.

company's share of capital spent on the construction of joint stations. The contract is terminable on 12 months' notice.

The success of the Tanjore district board prompted the Government of India to secure more extended local assistance, with a view to railway extensions outside the usual "railway programme." In October 1897, the opinions of provincial governments were invited, and with their concurrence orders were issued, in 1898, authorising local bodies to levy cesses for railway purposes in cases where there was a margin left between the maximum leviable by a local board and that actually raised.[1] The income so derived was to be utilised for direct construction, or to provide guaranteed interest on capital borrowed by the district board, either directly, or indirectly through private companies, or from the local government. In 1903, the provincial governments were empowered to advance loans to the district boards on the security of this fund, called the "Guarantee Fund."[2] This was an instance of the attempts made to meet the situation created by the Secretary of State's refusal to extend the powers of borrowing of the Government of India.

Apart from railways owned and financed by themselves, a number of lines were constructed under the auspices of the district boards, with various forms of assistance. These were (*a*) grant of land free of cost, (*b*) free use of one side of the district board road, (*c*) recommendation to government for exemption from road cess or nominal payment of the same for 21 years, with power of renewal, and (*d*) cash subsidies for some years after construction, up to a certain maximum, in order to supplement the net earnings to

[1] Resolution No. 4445A Finance, dated 7th October 1897, and No. 3210A Finance, dated 22nd July 1898.

[2] Resolution No. 12 R. P., dated 12th January 1903.

make up a fixed minimum dividend on the capital outlay. Except in the case of the first two subsidised lines, namely, the Bengal-Dooars (1891) and the Tejpore-Ballipara (1894), the local authorities were to share any surplus profits over the fixed minimum. Power was also reserved for the purchase of the lines after the expiry of 21 years from the date of sanction, or at subsequent intervals of seven years, on six months' notice. The purchase prices varied from 20 to 25 times the average net annual profits during the three or four years preceding purchase, subject ordinarily to a maximum of 120 per cent and a minimum of 100 per cent of the total capital expended.[1] The actual amount of subsidy and assistance, partially or wholly covering the different forms mentioned above, was determined in each case separately. There had therefore been slight deviations from the standard in every contract. In two cases, the municipality concerned permitted the railway companies the use of one side of the municipal roads on condition that after 20 years from the date of sanction a track rent of Rs. 2,000 per annum per mile would be levied.[2]

In many of these instances the lines were originally undertaken as tramways, and were not governed by the Railways Act of 1890. In subsequent years they have been brought under the provisions of the Act and have since been regarded as light railways. Seven companies were formed, between 1891 and 1900, to construct lines under the auspices of district boards, the first being the Bengal Dooars Railway, which was subsidised by the Jalpaiguri district board, up to 1899.

The study of district board lines brings out the interesting fact, that all the railways owned by such boards lie in

Under Section 41 of the Bengal Act III of 1883.
Municipality of Howrah for Howrah-Amta, and Howrah-Seakhala Railways.

the Madras Presidency, while other forms of assistance prevail particularly in Bengal and Assam. Other parts of India are singularly lacking in such railway extensions. The reason perhaps is that private parties were more forward in railway undertakings in Bengal, which was the richer province, than in any other part. Moreover, the need for smaller lines in provinces other than Bengal, Assam, and Madras, was largely looked after by the central government, the branch line companies, and by Indian states. Personal influence and initiative of local officials were also partly responsible for such developments. In Madras the local government was from early times anxious to have pure state construction and ownership, while in Bengal, Bihar, and Assam, which were formerly under the same administrative control, the officials were generally in favour of encouraging private enterprise.

IX. Financial Administration

The railway policy of the Government of India has always been bound up with its financial arrangements. The history of the period under review reveals once more the continued pressure of the Government of India to have its power of borrowing extended, and the incessant check by the Secretary of State, with a view to keep the liabilities of the Government of India on account of public works under restriction. Ultimately, on the representation of the Indian government, the Secretary of State realised the impossibility of maintaining his strict limits.

In January 1881, Lord Hartington laid down the policy of financing productive and protective public works, and declared that the borrowing for productive works was to be limited to £2½ million per annum. Protective but unremunerative works were to be constructed out of revenue, and

up to half the amount in the Famine Insurance Grant could be spent on such railways and irrigation. An expectation was held out that when affairs in Afghanistan as well as the fiscal operations of the Government of India were settled the limit might be extended.[1] In 1883, the Government of India reminded the Secretary of State of this promise, and while recognising the need for some restrictions on borrowing, suggested that the government's financial facilities could be extended by capitalising a part of the Famine Insurance Grant, so that the interest only on the capital required, and not the whole outlay for certain unproductive but protective railways might be charged against that grant.[2] At the same time, Sir Theodore Hope, Member in charge of Public Works, proposed that the grants for Imperial Public Works should be placed upon the basis of a quinquennial contract " what had been made for administrative purposes with provincial Governments."[3] As one of the early proposals for curing the evils of unsettled annual financial supply and the system of " Lapses," this note is memorable.

Ever since 1868, when Sir John (afterwards Lord) Lawrence drew up a forecast of probable railway expenditure for the next five years, it became the practice of the Public Works Department to have in view expenditure on government account during three to five years following every financial year. This in no way bound the allotment of funds in subsequent years, however, and in 1878-80, famines and the troubles on the frontier greatly upset the forecasts. On the recommendation of the Famine Commission of 1880

[1] Despatch No. 1 Financial, dated the 6th January 1881, to Government of India.

[2] Despatch No. 29 Financial, dated the 23rd January 1883, to Secretary of State.

[3] Minute by the Hon'ble T. C. Hope, dated the 20th January 1883, to despatch Financial No. 29 of 23rd January 1883.

attention was again drawn to a "programme" of railway extensions and expenditure. In 1883-84, the Government of India prepared two Schedules, A and B of railway projects. The Select Committee of 1884 recommended that as mischief was caused by constant fluctuations of policy and supply of funds, it was desirable to draw up a careful forecast, for a term of years, and to adopt a scale of annual expenditure which could be reasonably maintained.[1] Thereupon grew the system of providing railway capital under the "Programme." The government's programme comprised all lines owned by the state or for which it had direct financial responsibility, including the payment of guaranteed interest. Lines for which the state did not bear direct financial risks were left to themselves outside the "Programme." In subsequent years the whole attention of the Government of India was directed to discover methods to increase non-programme lines. The Indian state lines, branches under the special terms of 1893-96, and the district board lines were the outcome of such attempts.

As regards the limit to borrowing, the Select Committee of 1884 thought that the then amount of £2½ million might safely be enlarged. The hypothecation of a part of the Famine Grant for payment of interest on capital spent for either protective or productive railways was condemned,[2] and the desire was expressed that the extension of railways should not involve additional taxation. Regarding borrowing in India, it was stated that if money could be got in that country the advantages would be very great particularly in view of the alarming state of foreign exchanges and the rapid growth of sterling liabilities. "For political as well as for financial reasons it was desirable that loans should

Report of the Select Committee, 1884, para. 29.
Report of the Select Committee, 1884, para. 32.

as far as possible be raised in India. On the other hand when the difference between the rates of interest in India and England is so considerable as to afford full compensation for the comparative disadvantages of borrowing in England, the Secretary of State should not hesitate to borrow such moderate sums in this country (England) as will enable the Government of India to complete such public works as have been sanctioned." [1]

The Secretary of State concurred with the recommendations, and in view of the urgency of the times, raised the maximum limit of annual borrowing to £3½ million or Rs. 350 lakhs, at an exchange of two shillings to the rupee.[2]

In 1885 the sources of capital for railway purposes thus included the sums provided by the state by borrowing, out of central revenues, from provincial governments, from appropriations out of the Famine Grant, from Indian states, and lastly from the amounts raised by companies on guarantee or other assistance by the state. The limit of Rs. 350 lakhs for state borrowings per annum, as laid down in 1884, continued as the standard for a considerable time.

In 1892, the Secretary of State (Lord Cross) noted that the average amount charged against borrowing from 1885-86 to 1891-92 was Rs. 363 lakhs, the previous limit of Rs. 250 lakhs having been specially waived, in 1885-87, to provide for a rapid extension of the frontier lines.[3] The impossibility of keeping within the limit was realised, and the total

[1] Report of the Select Committee, 1884, paras. 31-33.

[2] Despatches No. 89 Railway, dated 14th August 1884, and No. 148, dated 27th November 1884.

[3] Financial Despatch No. 103, dated 16th June 1892. Evidence of Mr. F. C. Thompson before the Mackay Committee, 1908, pp. 164-169. 545 miles of military lines were constructed on the N. W. Frontier in 1887 only, the average cost of the military section being not less than Rs. 1½ lakhs per mile. At the close of 1902 the total capital outlay for 5,200 miles of state-owned and worked lines was Rs. 84·5 crores. Of these more than 1,030 miles were purely military lines involving capital expenditure of nearly Rs. 16 crores. The operating ratio for the military section in

grant, including the contribution from the Famine Fund, was extended to Rs. 500 lakhs. Three years later the limit was further extended, and a three years' "programme" was sanctioned, involving Rs. 14 crores (1,400 lakhs), of which Rs. 11 crores were to be spent by state agency, Rs. 1½ crores on open lines in the hands of companies, and Rs. 1½ crores to be held in reserve, to meet the contingency of the famine grant failing to be available. Government programme then included only that expenditure to which the total limit of Rs. 500 lakhs applied. Attempts were made to supplement the capital supply, outside the programme, through branch line terms. The capital expenditure on the East Indian Railway was entered in the programme, but the requirements of the agency companies were kept outside.

In 1894, a proposal was made by the Bengal Nagpore Railway Company to raise funds in India by the issue of rupee debentures guaranteed by the government. This was not considered desirable on the ground that it might interfere with state loan operations.[1] The Secretary of State laid down that all money obtained in India for other than branch lines should be raised, as a general rule, by the Government of India, and expended on state lines or lent to companies. Sanction was, however, given to the companies to have the amount raised for them in India supplemented by sterling borrowings with government guarantee in England.

In 1897, a "programme" for three years for an expenditure of Rs. 29·6 crores, including Rs. 1·6 crores for old guaranteed lines, was sanctioned, marking the introduction of a new system.[2] The whole question of financing railways

1902 was 112%, and the total loss to the state in working the N. W. Ry., commercial and military together, was nearly Rs. 72 lakhs in one year.

[1] India Financial Letter No. 370, dated 20th September 1894.

[2] India Financial Letter No. 327, dated 4th November 1896, and Secretary of State's despatch, Financial No. 1, dated 7th January 1897.

was henceforward looked on as one of ways and means, and all expenditure, for which government had financial responsibility, was included in the "programme," making no distinction between amounts borrowed directly by the state and that through the agency of companies. The companies were permitted to continue sterling borrowings on their own account, but they ceased to have the same freedom as before, and their claims to a place on the programme competed on equal terms with those of other lines.

A further change in the financial arrangements was made in 1899, when the "programme" expenditure of Rs. 20·3 crores for the three following years was sanctioned. A question was raised as to whether the new branch line terms involving a rupee guarantee would require the inclusion of such lines within the programme. The Secretary of State gave his decision in the affirmative,[1] and the programme for 1899-1902 comprised all railways for which government undertook responsibility or offered firm guarantee, in sterling or in rupees. At the same time it was decided that a continual triennial programme of railway construction would thenceforward be prepared in place of the three years' forecast.

A new feature in railway finance had then to be faced. Traffic on the old lines had by this time increased enormously, and the need was keenly felt for improved facilities on open lines, including the introduction of up-to-date safety devices and other appliances to keep the railways efficiently equipped for handling increased business. New lines had therefore to be postponed for a time, and of the allotted sums of Rs. 6·5 crores and Rs. 9·23 crores, in 1900-01 and 1901-02, only one crore was provided for new construction, the bulk of the amount being spent upon open lines and on those under construction.

[1] Railway Despatch No. 106, dated 4th November 1897.

In 1900, the Government of India revived the question of the separate provision of funds for railway purposes. Major Conway-Gordon had urged, in 1884, the need for separating railway finance from the general finances of the Government of India, and suggested that railway accounts should be kept on commercial principles.[1] In 1889, the matter was brought up, but nothing could be done to free railway capital from the exigencies of the state. In 1900 the Government of India suggested a minimum annual provision of Rs. 6½ crores for railway purposes, and proposed "that the programme of railway expenditure should be based on the minimum amount which they could reckon on being able to give in all but extraordinary times."[2] The Secretary of State could not agree, and dissented from the view that financing of public works should be distinct and free from the restrictions of the ordinary budget rules. He observed: "so long as the railways depend for money on the Government, they must share in the vicissitudes of the public finances.........so long as the money has to be found for railways as well as for all other administrative purposes by the Government, and on the credit of general revenues, the separation of railway finance from the general financial policy of the State must be a very difficult matter."[3] As regards the suggestion made from time to time to hand over the financial management of the railways to a special Commission or Trust, the Secretary of State said: "it would be obviously impracticable to give such a body power to raise money on the credit of the government, and without reference to the general financial situation."

In the despatch it was laid down that in future railway

[1] Evidence of Major Conway-Gordon, Parliamentary Select Committee of 1884, para. 3553, pp. 204-8.

[2] Financial Letter No. 112, dated 29th March 1900.

[3] Financial Despatch No. 8, dated 4th January 1901.

programmes the Government of India should provide first of all for the needs of open lines, the amount required for them being regarded as the first charge on the money available for railway purposes. Second would come expenditure on lines under construction by companies. Lines begun by state agency and new projects would follow next.

From 1900 onwards the railways began to yield net profits to the State. This emboldened the government to enter the market for loans more freely. Forecasts of expenditure of about Rs. 11 crores per annum were sanctioned for the three years 1902-3 to 1904-5, while the purchase was contemplated of railways whose contracts were to expire within the following ten years.[1] In August 1904, the Secretary of State conceded to the Government of India the power of re-allotting lapsed grants for railway expenditure within a limit of Rs. 50 lakhs in one year.

In the meantime, between 1901-1903, Mr. Thomas Robertson, C. V. O., had made special enquiries into the administration and working of Indian Railways, and proposed important alterations in the whole system.

X. *Indian Railway Legislation*

The period under review was the most important in the history of Indian railway laws. The Act of 1879 was defective as regards the inspection of railways, both before and after opening. A short Act (Act IV of 1883) was therefore passed, empowering the Governor-General in Council to take action for the protection of the public against dangers from inefficient management of a railway and to appoint officers for periodical inspection with this object.

[1] Financial Despatch No. 15, dated 15th January 1904.

The law also provided for the framing of rules by the Government of India for the inspection of all railways, instead of for state lines only, prior to their being opened for passenger traffic.

The need for a general railway act had long been recognised, mainly owing to disputes arising from interchange of traffic, and preferential rates and fares. In 1884, a draft bill was accordingly prepared and opinion was invited thereon, in India and in England. The principal feature of the bill was the provision for settlement of disputes between railways by arbitration. The discussion on this bill extended over five years and the passing of the "Railway and Canal Traffic Act" of 1888, in the United Kingdom, influenced the criticisms very largely and ultimately led to a complete change in the character of the bill. The Act of 1879 was more or less modified at every clause, and instead of arbitration the machinery of a Commission was substituted. In view of the special circumstances of the country and the position of the Government of India in relation to the railways, the Secretary of State gave only a partial sanction to the provision of a Commission, so that instead of a permanent tribunal the bill finally empowered the Governor-General in Council to appoint special commissions whenever circumstances so required. The home Boards of the guaranteed railways considered the bill as infringing their rights under their contracts, and strongly objected to many of the clauses, particularly to those dealing with the appointment of commissions, control and modification of rates and fares, and measures against undue preference. A Select Committee was appointed to look into these objections and to finally shape the bill. The Committee thought that no saving clause, regarding the rights of the companies under the contract, should be inserted in the bill, for such a clause might bring each company under a different law and would cause grave inconvenience. Each company might claim to

interpret the Act according to its views of its rights under the contract, and this would very seriously impair the operation of those parts of the Act which dealt with the creation of traffic facilities and the prevention of undue preference. The long-desired Indian Railway Act was finally passed as Act IX of 1890. The companies still grumbled, but the Government of India took a firm attitude.[1] It assured the companies, that no undue interference would occur, and unless it could be shown that very unreasonable encroachment on the rights enjoyed under the contracts had resulted the companies should have no reason to complain.

An important feature of the Act was its applicability to railways belonging wholly or partially to Indian states, or those passing through their territory, as well as to the railways in British India. In many cases such lines formed part of through routes and it was evident that civil and criminal jurisdiction for damage or offences under the Act must lie with the Government of India. After considerable negotiations with almost every Indian State this end was finally achieved.

The general tenor of railway legislation in India has been to follow the example of Great Britain, and the Act of 1890 which was passed into law on 21st March, as Act IX of the year, was no exception. In fact, some of the chapters and clauses were taken almost verbatim from the Railway and Canal Traffic Act of 1888. The law came into operation on 1st of May 1890, and remains in force to the present day.

The Act contains ten chapters, dealing with the following subjects, in order, namely: (*i*) Title and definition, (*ii*) Inspection of railways, (*iii*) Construction and maintenance of works, (*iv*) Opening of railways and right to use locomotives, (*v*) Railway Commissions, and traffic facilities,

[1] Despatch 36 Railway, 29th April 1891 from Government of India.

including duty of railway administrations to arrange for receiving and forwarding traffic without unreasonable delay. It also makes provision for preference or partiality, undue influence, unjust terminals, etc., (*vi*) Working of railways and the power of railway administrations for framing rules and conditions for conveyance of freight and of passengers, (*vii*) Responsibility of railway administrations as carriers, (*viii*) Accidents and their reporting, (*ix*) Penalties for infringements of the Act, and other offences, with procedure therefor, and (*x*) Supplemental provisions, including taxation by local authorities, delegation of powers of the Governor-General, power to extend the Act to steam tramways, etc.

The preamble of the Act declared, that it was expedient "to consolidate, amend, and add to the law relating to railways in India," and all the previous Railway Acts were repealed, including that portion of the Carriers' Act of 1865 which referred to railways.

The fourth chapter deals principally with the opening of a railway to passenger traffic, sections 23 and 24 being extremely important for public safety. The fifth chapter is the most important from the public point of view. It proposes the establishment of Commissions for the settlement of disputes or claims between companies, or between them and the public, and provides for "traffic facilities." The provisions are largely copied from the English "Railway and Canal Traffic Act" of 1888, the principal difference being that Indian Commissions are to be merely temporary tribunals, and are to be appointed by the Governor-General in Council for specific purposes only. It may be noted here that no regular Commission has been appointed under the Act as yet. Sections 42 to 46 of chapter five are remarkable, as providing, for the first time in India, for reasonable traffic facilities and the protection against undue preference. The sections of chapter six are

partly the same as those in the previous Act of 1879, with some additions empowering the state to make arrangements or settle disputes regarding common terminus or junction between two lines. The chapter also provides for working agreements, establishment of ferries, cart roads on railway bridges, approach roads to stations, and charging of tolls for these services. An important section requires the submission of returns in prescribed forms, regarding capital and revenue transactions, traffic, etc., of every railway. The other chapters, seven to ten, have nothing remarkable about them, except that chapter nine dealing with penalties and offences, refers, in sections 87 to 98, to railway companies only. The offences of the staff are dealt with not by Government, but under sections 99-105. Sections 112 and 113 of the same chapter have, in later years, attracted a good deal of attention, in connection with the prevention of travelling without ticket. Under the powers conferred by section 146 of the tenth chapter the Governor-General extended the application of the Act to steam tramways in the year 1898.

XI. Rates and Fares, 1882-1903 [1]

The period under review has been characterised as one of competition and rate adjustments. In the previous period two features were noted, namely, excessive interference by the Secretary of State, thus handicapping the Government of India in the exercise of its control; and the tendency of the guaranteed companies to levy high rates with a view to obtain a large income with a small

[1] For a more critical and detailed study of the subject, see Mehta, Indian Railways, Rates and Regulations, Ch. IV, p. 99, etc., and S. C. Ghosh, Monograph on Indian Railway Rates.

amount of work. This was facilitated by the absence of inter-railway competition, and all that the Government of India could do was to urge the lowering of the charges.

In 1880, the Government of India issued a resolution recommending the adoption of the maximum of $2\frac{1}{2}$ pies per mile for the lowest class. Two years later, third class fare on the East Indian Railway was reduced to $2\frac{1}{2}$ pies from 3 pies per mile. The Government of India thenceforward took up a more determined policy of bringing about adjustment of rates and fares, with a view to improve the traffic.

With the opening of the Rajputana-Malwa Railway in 1881, and its junction with the Bombay-Baroda line at Ahmedabad, Bombay was brought 345 miles nearer to Delhi and the grain-producing districts of Upper India. This brought about keen competition between the lines leading to the sea-ports, and a new era of rates and fares began. The distance between Delhi and Calcutta is 954 miles, while by the new route the distance between Delhi and Bombay is only 889 miles. As a result, there has been a considerable displacement of traffic from Upper India, in favour of Bombay, especially in cotton, wheat, and seeds. The rate for grain from Delhi to Bombay, *via* Bombay Baroda and Central India and Rajputana-Malwa Railways was only 11 annas per maund as against 13 annas from Delhi to Calcutta *via* East Indian Railway. A rate war then followed, and the first indication of trouble took the shape of a memorial, in 1881, from the Calcutta traders, backed by the Bengal Chamber of Commerce, praying to government for the restoration of the balance previously existing between the rates from Upper India to Bombay and to Calcutta. Government was doubly interested, for while the East Indian Railway had become its property and the Rajputana-Malwa was under its direct management, the Bombay-Baroda, and the Great Indian Peninsula

railways enjoyed their protection under the guarantee. The Government of India therefore expressed the opinion that "it was immaterial how the surplus of the country found its outlet, provided that the railways afforded carriage at the lowest rates consistent with yielding a fair and reasonable return on the capital laid out."[1] The lower cost of working on the East Indian Railway was held to be a strong argument in favour of a proportionately lower mileage rate on that line to Calcutta ; but the interests of Bombay were against this principle, and the matter was brought up to the Secretary of State for final decision. He, however, disagreed with the Government of India, and declared that "to attempt to proportion rates on competing lines to the supposed aggregates of the cost of transport on each was impracticable, and would not be desirable even if it were practicable." Moreover, "the advantages due either to geographical position or other circumstances should furnish no reason for imposing on either artificial restrictions in the shape of enhanced rates."[2] A few months later, he finally declared himself in favour of competition because of its tendency to lower rates. The railway administrations should, in his opinion, be controlled only in extreme cases, where, on account of the guarantee, the companies might be recklessly charging unprofitable rates. The legitimate consequences of competition, regulated by the desire to apply skill and economy, which would be stimulated, would, he believed, be beneficial both to the railways as well as to trade generally.[3] The Government of India accepted this principle and welcomed the reductions in rates and fares that were effected through competition.[4]

[1] Despatch No. 1119 R.T., dated 26th December 1881, and Letter to Govt. of Bombay No. 1192 of 19th October 1881, from Govt. of India.

[2] Despatch No. 41 Railway, dated 9th March 1882, from Secretary of State.

[3] Despatch No. 132 Railway, of 19th October 1882.

[4] Administration Report, 1882-83, p. 56.

In March 1883, government laid down in a circular the general principles on which rates and fares should be fixed.[1] It recognised the principles of "cost of service," and "what the traffic will bear" as determining the minimum and maximum limits under ordinary circumstances, while, for special cases, it was observed, that the bottom limit might be ignored for a time, with a view to secure maximum traffic. The fundamental aim of railway administrations should, in its opinion, be to attract the maximum amount of traffic the lines could carry, at the best rates obtainable. In determining any particular rate, the whole circumstances of the traffic must be considered. Tapering rates were recommended as legitimate. Government proposed to fix, in the case of monopolistic lines, the maximum rates and fares chargeable, in the interest of the public. In cases of competition, rival routes would be left alone to attract the largest traffic they could obtain, so long as there was no reckless undercutting injuriously affecting the interests of the state.

At about the same time, the Secretary of State gave his decision on the apportionment of through rates between Bombay Baroda and Central India and Rajputana-Malwa Railways, to be based upon "the principle of mileage division under the Clearing House arrangements......... whatever their original cost of construction or their present cost of working may be."

The Select Committee of 1884 discovered that government control was practically ineffective, and the fixing of high maxima without power to alter them from time to time served no useful purpose. Moreover, the control vested in the Government of India under the original contracts was in effect limited by the revision in 1869.[3] It

[1] Circular No. 162 R.T., dated 2nd March 1883.

[2] S.C. Ghosh, Monograph on Indian Railway Rates, p. 26.

[3] Evidence of Major Conway-Gordon, Mr. Rendel, Mr. Juland Danvers, etc., before the Select Committee of 1884.

was therefore recommended that government should have "power of fixing, or from time to time varying, the maximum of fares and rates, subject to adequate provisions to secure the interests of investors."[1]

Following upon the pronouncement of policy in 1883, greater and greater complications arose in the fixing of rates, local and through, on different railways. Reductions were effected by many lines, with the idea of retaining traffic or of capturing that of the neighbouring railways ; spheres of influence were created and jealously guarded, and increased complaints were made to government calling upon it to interfere. The lines had, in the meantime, ceased to remain disjoined and isolated, and with the extension of junctions and competitive routes, the interests of the railways became complex. In the circumstances, the Government policy of minimum of interference, insisted upon by the Secretary of State, had to give way to one of closer regulation of the powers of the companies. A conference of traffic officers, the representatives of government, and of trade was held in 1884, at Calcutta, and various important general principles were agreed to. The position could not however be improved very much, as the Great Indian Peninsula Railway did not accede to the proposals of tariff simplification.

In 1885, the Government of India proposed the establishment of a Clearing House for the Indian railways, to settle all inter-railway disputes, and to secure unification and simplification of rates and classification. The companies were afraid of encroachment on their liberty, and the Secretary of State thought that the time had not yet arrived for such a step. The position however was becoming more and more complicated.[2]

Report of Select Committee, 1884, para. 27.
Government of India, P. W. D. despatch No. 120, dated 7th August 1885.

In 1887, government felt the urgency of defining some line of guidance besides mere enunciation of broad principles for determining the rates and fares. It was then resolved to fix a schedule of maxima and minima rates, in order to protect public interests on the one hand, and to secure the state, on the other hand, against reckless and ill-considered charges that might imperil the financial stability of government. The lower limit to the fixing of rates was first introduced in 1884, when the Rajputana-Malwa line was leased to the Bombay Baroda and Central India Company, for working. The minima rates are peculiar to India, and have been based upon average cost of haulage, thus ensuring the observance of charging not less than what the state could bear.[1] Dividing public rates into mileage and terminal charges, the following schedule of maxima and minima mileage fares and rates, per maund or per passenger per mile were laid down.

Goods Rates.			Passenger Fares.		
Class.	Maximum in pies.	Minimum in pies.	Class.	Maximum in pies.	Minimum in pies.
1st	$\frac{1}{3}$	$\frac{1}{10}$	1st	18	12
2nd	$\frac{1}{2}$	$\frac{1}{2}$	2nd	9	6
3rd	$\frac{2}{3}$	$\frac{2}{3}$	Inter.	4½	3
4th	$\frac{5}{6}$	$\frac{5}{6}$	3rd	3	1½
5th	1	1			

The Resolution of 1887 is considered as the most important document guiding the rates policy of Indian railways, dealing as it does with various vital matters.

For the terminals no maxima were fixed, but in case of dispute, government reserved the authority to fix them

[1] Resolution No. 1446 R. T., dated 12th December 1887. See Mehta, Indian Railways, Rates and Regulations, p. 111.

reasonably. The companies were given full latitude within the maxima and the minima. Facilities for through rates and services were urged, undue preference was condemned, and the classification prevailing on the East Indian Railway was recommended for adoption by all, unless quite unsuitable to particular local conditions.

The companies objected to the Resolution and particularly to the schedule which in most cases left them little freedom. It was pointed out that rates for goods, except for the first class, could only be changed by altering the classification, which again required the sanction of government. The schedule was accordingly revised in 1891, as follows :—

Goods Rates, per mile per maund, in pies.			Fares, per mile per passenger, in pies.		
	Maximum.	Minimum.		Maximum.	Minimum.
Special Class	$\frac{1}{3}$	$\frac{1}{10}$			
1st Class	$\frac{1}{3}$	$\frac{1}{6}$ (1st to 5th Class)	1st Class	18	12
2nd Class	$\frac{1}{2}$		2nd Class	9	6
3rd Class	$\frac{2}{3}$		Int. Class	$4\frac{1}{2}$	3
4th Class	$\frac{5}{6}$		3rd Class	3	$1\frac{1}{2}$
5th Class	1				

Some of the railways accepted the new schedule, while the Great Indian Peninsula, Bombay Baroda and Central India (broad gauge), and Madras Railways did not readily admit government interference till after the expiry of their first contracts and the acquisition of the lines by the state. The schedule remained in force up to the end of the Great War, with only slight modification in July 1910, by which the special and first classes were amalgamated, thereby bringing down the minimum for the lowest class to $\frac{1}{10}$th pie.

In concluding the study of rates and fares, during 1882 to 1903, mention should be made of the lack of any progress

towards simplification of the tariff, which had been urged ever since 1872. In 1884, Col. J. G. Medley remarked that each guaranteed line had become an "*imperium in imperio*" and government had often had a hard task to compel uniformity of action in the joint interests of through traffic.[1] The proposal for a Clearing House, as has been noted, did not meet with the approval of either the companies or the Secretary of State. In 1887, it was suggested that "the various railway systems should, as far as possible, serve the country as if they were under one management, and the dealer in country produce should not be hampered in his operations by the necessity to base his calculations on as many different scales of rates as there may be railways between the starting point and the destination." [2] But the Railway Conference of 1888 did not accept the proposal, and government had to modify its resolution. The matter was again pressed by Mr. Robertson in his Report in 1903, and finally, in 1905, government appointed the Tariff Simplification Committee.

The Railway Act of 1890 did not directly deal with the rates and fares on Indian railways, because these were covered by the contracts with each company. When the contracts with the companies were renewed, during the period under review, provisions were made empowering the government both to fix and to vary maximum as well as minimum rates, with a reasonable margin between them. So far as lines worked by the state were concerned, the public were left with no other protection than departmental orders and resolutions of the Government of India.

Section 42(2) of the Act IX of 1890, provided for the very important question of undue preference. Modelled on

[1] Col. J. G. Medley, Railways in Upper India, 1884.
[2] Resolution No. 1446 R. T., dated 12th December 1887.

the British Law, it laid down that "A Railway Administration shall not make or give any undue or unreasonable preference or advantage to or in favour of any particular person or railway administration, or any particular description of traffic, in any respect whatsoever, or subject any particular person or railway administration or any particular description of traffic to any undue or unreasonable prejudice or disadvantage in any respect whatsoever." In actual practice, the absence of a convenient machinery to adjudicate upon the complicated question of undue preference in India, rendered the legal provision comparatively ineffective.

The problem of Indian railway rates was thoroughly gone into by two railway experts, Mr. Robertson and Mr. Priestley, in the beginning of this century. They travelled extensively both in India and in America, and drew some important conclusions about the level of rates in the two countries. Mr. Robertson, after an elaborate comparison between English, American, and Indian rates argued that, considering the long distances, the rates in India were too high for the development of traffic. With a view to effect reductions in the rates for long-distance traffic, he emphasised that all rates in India, both local and through, should be on a tapering scale, the whole distance of conveyance being treated as though belonging to one administration, in case of through traffic.

Mr. Priestley pointed out that the success of the American railways was largely due to their low rates, which had developed their traffic enormously. These recommendations will be followed up in Chapter VII.

CHAPTER VI

MANAGEMENT AND RESULTS, 1882-1902

I. Management and Control, and Classification

The period under review opened with a revised headquarters administration under a Director-General of Railways, assisted by a Director of Stores, a Director of Traffic, a Consulting Engineer, and an Accountant-General for Railways.[1] Between 1881 and 1890, further detailed alterations were made in the Central administrative organisation and in its relation to provincial controlling authorities. The tendency of the previous period, of decentralisation in control, showed marked signs of change in the new era. In 1890, instead of a Deputy Secretary and Under-Secretary, Railway Branch, there were only an Under-Secretary and an Assistant Secretary, Railways, in the General Branch. The posts of Director of Stores and of Construction had disappeared, and in their place there was an Under-Secretary, who was *ex-officio* Deputy Director-General of Railways. The post of Accountant-General, Railways, had also been abolished, and the Accountant-General, Public Works Department, was once more made responsible for the work.

Further changes were made in 1897. The post of Director-General, Railways, was abolished, and the post of a Secretary to the Government of India in the Public Works Department, Railway Branch, was created in its place. The other Headquarters Staff with the Central Government consisted of: Two Deputy Secretaries, one of whom was

[1] Compiled from Appendix C, Railway Administration Report, 1928-29, Vol. I.

Director of Railway Construction and *ex-officio* Director of Stores, the other being Director of Railway Traffic and *ex-officio* Director of Statistics. There were also two Under-Secretaries, two Assistant Secretaries, and one Mechanical Assistant. The post of Consulting Engineer for State Railways was also abolished, and his duties were distributed between the two Directors. The work of accounts continued to remain under the Accountant-General, Public Works Department, who was also an *ex-officio* Deputy Secretary to the Government of India.[1] The significance of all these changes was the increased centralisation of the machinery for control and its close dependence on the Government of India.

In 1903, Mr. Thomas Robertson, Special Commissioner for Indian Railways, summed up the then position of the administrative and controlling authorities in England and India.[2] Broadly speaking, the railways of India could be divided into two main groups, namely, those for which the Government had no financial responsibility comprising about 5,462 miles, and the remaining 20,474 miles for which it had the responsibility. As for the first class of lines control was practically limited to: (*a*) inspections with a view to secure safety and convenience of public, and (*b*) investigation of accidents. The second class of lines was partly worked by the state directly, and partly by companies under contracts. In the case of state-worked railways the Government of India exercised the same kind of general supervision and control as with the first group, through Government Inspectors, independent of the railway management. The actual working was entrusted to Managers exercising extensive powers of internal administration, under the direct supervision

[1] Note on the Organization for Government Control; Appendix C, Administration Report, 1928-29, Vol. I.

[2] Report of Mr. Thomas Robertson, C.V.O., 1903, pp. 4 and 5.

of the Government of India. In the case of company-worked railways the chain of control in England and India was as follows: In England, the Secretary of State in Council had absolute control over a railway within the terms of its contract. The Government Director appointed by the Secretary of State to all the Boards of Directors possessed plenary powers of veto. A Consulting Engineer, who was not a servant of the State, was consulted by the Secretary of State on technical matters. In India the Governor-General in Council exercised, through the Railway Branch of the Public Works Department, absolute control over the working of the railways, both in management and in expenditure. The Railway Branch consisted of the Member of the Viceroy's Council in charge of the Public Works portfolio, and 12 officers, namely, one Secretary, three Deputy Secretaries—one each for Traffic, Construction, and Accounts—four Under-Secretaries and four Assistant Secretaries. A consulting Engineer for each of seven circles was in immediate charge on behalf of the Government of the railways in different localities. He was assisted by deputies, and in Bombay, Madras, and Burma, he was also Railway Secretary to the local governments. The duties included the inspection under the Railway Act of 1890, and reporting on the upkeep and general management of the railways in all departments. Government Examiners of Accounts, one for each of the seven circles, watched the expenditure of the railways. On account of the loopholes left in the terms of contract the interests of government and of the companies were apt to be antagonistic, particularly in the allocation of expenditure and its proper distribution over the two half-years. This had necessitated strict supervision and control to check extravagance in construction and subsequent waste in maintenance and working.

The organisation that had grown up was, however, far from satisfactory, either in efficiency or in economy. Mr.

Thomas Robertson recommended drastic changes, which were introduced in 1905, and the present Railway Board was constituted.

With the growth of railways under the new policy the problem of suitably classifying them for governmental administrative purposes engaged attention. From time to time altered systems were tried, and finally by the end of 1902, the following classification, based upon ownership and management, came to be adopted :

I. State Lines worked by Companies.
II. State Lines worked by the State.
III. Lines owned by Companies guaranteed under old contracts.
IV. Lines owned by Companies guaranteed under new contracts.
V. District Board Lines.
VI. Assisted Companies' Lines.
VII. Native State Lines worked by Companies.
VIII. Native State Lines worked by State Railway Agency.
IX. Lines owned and worked by Native States.
X. Lines in foreign territory.

The classification was thus made more scientific and the old nomenclature of Provincial State and Central State railways was given up. At the close of the year 1902, these railways were worked by 33 separate administrations, including 24 companies operating 17,754 miles, 4 Government Agents for 6,000 miles, and 5 Native States managing 2,184 miles.

II. The Gauge Policy

With the revival of private enterprise, the gauge controversy on Indian Railways was resuscitated. Almost every

new project gave rise to discussions regarding the proper capital expenditure, and necessarily of the gauge. In 1883-84 the Government of India collected expert opinion on the relative cost of transport on the broad and metre gauges, and early in the latter year defined its policy.[1] The policy accepted for some years past provided that metre gauge was to be invariably adopted for local and provincial railways "specially designed for a slow goods traffic." On the other hand, the broad gauge was to be regarded as suited to "supplementary through lines of communication," or to those designed for military or strategic purposes. For new constructions, break of gauge for short lines should be avoided, and due calculation should be made of the probable growth of traffic under normal as well as abnormal circumstances, such as famines, etc.

The Parliamentary Select Committee of 1884 endorsed this view, and laid down that "all the leading trunk lines, with their principal feeders, should be on the broad gauge, the metre gauge being as a rule confined to tracts of country where that system is already in successful operation, and to local lines where the traffic is likely to be so slight that cheapness of construction more than counterbalances the undoubted disadvantages of break of gauge."[2] This announcement, however, was too vague, and the need for a more definite statement was soon felt. In 1889 Colonel Conway-Gordon, the Director-General of Railways, submitted an able note and demanded a declaration of policy in either of two ways, *viz.*, by making it illegal, without special sanction of government, to make any line in India on a gauge other than the 5ft. 6in. standard, or to localise the gauges to certain areas and to make it illegal without

[1] Despatch No. 48 Railway, April 1884, to Secretary of State. Bell, Railway Policy, p. 181.

[2] Report of the Parliamentary Select Committee, 1884.

special sanction to break the gauge in those respective areas. The first alternative would, in his opinion, be more economical in the end to the nation, while, as a political measure, the second was more feasible.[1] In June 1890, the Government of India formulated its proposal on the subject as follows: That it was not desirable to legislate on the gauge question. Certain areas were as a rule to be reserved for the metre gauge, beyond which all main lines were to be constructed on the broad gauge only. There should be no material expansion of existing metre gauge systems, and if advisable they should be replaced with broad gauge lines of a light character.

The Secretary of State was in general agreement with the Government of India, but he felt that there was no necessity for any more positive rule than that suggested by the Select Committee of 1884. At the same time the proposal for an eventual conversion of one of the two gauges for ultimate attainment of uniformity was definitely discouraged on financial grounds.

In 1889, when the broad gauge mileage had grown to 8,000 and the metre gauge to 5,000, the working statistics of the two gauges in ton-miles were compared and the superiority of the broad gauge was proved. The introduction of the metre gauge for subsidiary lines was approved only on financial grounds.[2] The areas served by the two gauges were by that time fairly defined, the metre being limited to the country north and east of the river Ganges starting from longitude 80° E., the whole of Burma, Rajputana and Guzerat, and the country south and west of the broad gauge line connecting Bombay and Madras. It

[1] Bell, Railway Policy, p. 183.

[2] Paper read by Mr. Waring before the Institution of Civil Engineers, 1889, Minutes of Proceedings, Vol. XCVII, p. 106. Mr. Thomas Robertson however demonstrated, in 1903, that a comparatively more intensive service was obtained from the metre gauge.

was then believed that the two gauges must neither be allowed to overlap nor compete with each other.

In actual practice, however, this policy was never adhered to. By the end of 1902, more than 14,000 miles of broad gauge and 11,000 miles of metre gauge lines were constructed, and in many places the policy of defined areas had been infringed. In fact, the metre gauge, which had originally been intended as a feeder, had become competitive with the broad,[1] and was often made use of to bring down the level of rates and fares on the older lines.

A new feature had also developed, in the meantime, in the provision of 2ft. 6in. and 2ft. gauge lines. The former gauge was adopted in 1898 for hilly or barren tracks, and for light military lines over rough country. The 2ft. lines were constructed for suburban railways, laid as steam tramways on one side of existing district board or municipal roads. The total mileage of such lines, which came to be treated as "Light railways," in 1902, was 968 miles.

This 'Laissez faire' attitude, which is the negation of a policy, has had full play in the growth of Indian railways ever since, and there appears to have been no longer any attitude or serious attempt made to confine the gauges to particular areas as was originally contemplated.[2]

III. *Progress of Work and Administration*

Between 1882, when the total mileage open was 10,150, and 1902 when nearly 26,000 miles were open, the net mileage added was 15,782, giving an annual average of 789 miles compared with the averages of 468 and 250 miles only

[1] Paper read by Sir F. Upcott before the Institution of Civil Engineers, 1906, Minutes, Vol. CLXIV, p. 196.

[2] F. G. Royal-Dawson, Paper on Indian Railway Gauge Problem. Read before the Institution of Civil Engineers, November 1921. Proceedings, Vol. CCXIII.

per year of the previous two periods, 1869-1881 and 1852-1869 respectively. New construction was almost stopped in 1882, when only 252 miles were added, being the lowest in any single year in the period under review. The highest net addition during any one year was 1,484 miles in 1899, while the mileages opened during 1884, 1887, 1889 and 1900 were all above 1,000 each year. The change in the policy adopted had thus borne fruit remarkably during those twenty years. At the same time, nearly 3,000 miles of new lines were sanctioned and under construction at the close of the year 1902.

The railway network had developed so much by the end of 1902 that it would not be possible to describe the progress with reference to each line or to show the expansion by periods on a map. There were altogether 96 different lines open to traffic administered by 33 railway administrations of various description.

In addition to the existing railway administrations of the previous period, and in substitution for some of them, many new administrations came into existence between 1882 and 1902. The more important of these are given below :—

	Name of Railway Administration.	Year of construction or formation.	Milege worked in 1902.
I.	Dibru Sadiya ...	1880	88
II.	Bengal Central ...	1881	125
III.	Southern Maharatta ...	1882	1,643
IV.	Bengal & North Western ...	1882	1,282
V.	Morvi State (Native) ...	1882	94
VI.	Rohilkhund Kumaon ...	1882	325
VII.	H. H. Nizam's Guaranteed State	1884	742
VIII.	North Western State ...	1886	3,780
IX.	Bengal Nagpore ...	1887	1,627
X.	Jodhpur-Bikaner ...	1889	824
XI.	Bengal Dooars ...	1891	114
XII.	Assam-Bengal ...	1892	589
XIII.	Burma Railways Company ...	1897	1,260
XIV.	Bhavnagar-Gondal-Junagad-Porebunder. ...	1897	455
XV.	Udaipore-Chitore ...	1897	67

Following upon the new policy of state ownership, with company management as found desirable, the Government of India systematically took every opportunity of acquiring ownership of all lines except small branches. The railways were thereafter either kept under direct state management, or were retransferred to the old companies under revised terms of working. The aim kept in view was always to cure the defects of some of the previous contracts, and one or more of the following methods were applied to secure more favourable financial interests for the state, *viz.*, reduction of amount of capital retained by the companies, reduction of the rate of interest guaranteed, alteration in the rate of exchange and terms of working, and modifications providing for a larger share of the state in the surplus profits.

The most important steps in Indian railway administration, taken during the period, were as follows: The East Indian Railway was purchased in 1879, and left in the hands of the company for working. In 1884 the Eastern Bengal Railway was acquired, and after amalgamating the lines with the Northern Bengal, and Calcutta and South Eastern State railways the whole system was worked directly by the state. Until 1892-93 this was left under provincial control, and then the entire line was taken over by the central government. The Bengal Central Railway system was worked by the Eastern Bengal Railway guaranteed company up to June 1884, and by state railway agency thereafter up to 1896. In January 1897, the company itself took over the working, and continued up to June 1905, when the line was purchased by the Government and merged into the Eastern Bengal Railway system. The Scind Punjab and Delhi Railway was acquired in December 1885, and was incorporated with the Punjab-Northern and Indus-Valley State lines, to form the North Western Railway system, which has ever since been worked directly by the state for strategic and other reasons. In 1889 the Oudh and Rohilkhund

Railway was purchased, and after an unsuccessful attempt at coming to favourable terms with the company, the working was retained in the hands of the state. The South Indian Railway was acquired in 1890, and the old company was re-appointed for management under modified terms. The same step was taken with the Great Indian Peninsula Railway which was purchased in 1900. The Indian Midland Railway which was working the Bhopal-Itarsi, Scindia State, Bina-Goona, and Bhopal-Ujjain lines, in addition to the sections constructed by the company as agents of the state, was merged into the Great Indian Peninsula System the same year, and the whole has thereafter been worked as one system.

Thus, except the Bombay Baroda and Central India, and the Madras Railways all the old guaranteed lines came into state ownership by the end of the period under review. These two were acquired subsequently in 1905 and in 1907 respectively.

On the other hand, the lines already opened and under the management of the state, in Hyderabad and in Mysore, were handed over to private companies for working in 1884 and in 1886. The former was taken up by a newly constituted company, while the latter was given to the Southern Maharatta Company. In September 1896, the management of state railways in Burma was contracted out to the Burma Railways Company. The first step taken in this direction was in January 1885, when the Rajputana-Malwa line was leased to the Bombay Baroda and Central India Railway.

So far as construction was concerned, apart from the older organisations, the most important part played during the years 1882 to 1902, was that by companies working as agents of the state, assisted companies, and the Indian States. The direct activities of the state appear to have been more confined towards the North-Western Frontier than elsewhere, as in the previous period. The following table

shows the more important lines opened during the period, apart from extensions of old railways.[1]

Name.	Classification.	Gauge.	Year first section opened,	Approximate mileage up to end of 1902.
1. Eastern Bengal (Dacca Section).	State line worked by State	Metre	1885	86
2. Cawnpore-Burhawal Link.	,,	,,	1896	80
3. Indian Midland Railway	State line worked by Company.	5′6″	1878	797
4. Bengal Nagpore ,,	,,	,,	1886	1,546
5. Madras (East Coast Line).	,,	,,	1893	497
6. Southern Maharatta Railway.	,,	Metre	1884	1,042
7. Lucknow-Bareilly Rly.	,,	,,	1884	231
8. Assam-Bengal Railway	,,	,,	1895	590
9. Dibru-Sadia ,,	Assisted Company	,,	1882	77
10. Bengal and North Western	(Land only, or Guarantee, rebate, or subsidies in modified forms.)	,,	1884	750
11. Rohilkhund Kumaon Railway	,,	,,	1884	54
12. Tanjore District Board Railway.	,,	,,	1894	71
13. Ahmedabad Prantij Railway.	,,	,,	1897	55
14. Mymensing Jamalpore Railway.	,,	,,	1898	53
15. Brahmaputra-Sultanpur Railway.	,,	,,	1899	59
16. Bengal Central Rly.	,,	5′6″	1882	125
17. Delhi-Umbala-Kalka Rlaiway.	,,	,,	1891	162

[1] Table compiled from Annual Administration Reports. Lines smaller than 50 miles in length have been left out.

Name.	Classification.	Gauge.	Year first section opened.	Approximate mileage up to end of 1902.
18. Southern Punjab Rly.	(Land only, or Guarantee, rebate, or subsidies in modified forms.)	5′6″	1897	425
19. Tapti Valley ,,	,,	,,	1898	155
20. South Behar ,,	,,	,,	1899	79
21. Jodhpur Railway	Native State line worked by Native State Agency.	Metre	1882	455
22. Bikaner ,,	,,	,,	1891	245
23. Udaipur-Chitore Rly.	,,	,,	1895	67
24. Morvi Railway	,,	2′6″	1886	94
25. Rajpura-Bhatinda Rly.	Native State Railway worked by British Indian State Agency.	5′6″	1884	107
26. Ludhiana-Dhurjakhal Railway.	,,	,,	1901	79
27. Jodhpur-Hyderabad (British) Rly.	State line worked by Native State.	Metre	1892	124
28. Bhopal Ujjain ,,	Native State line worked by Company.	5′6″	1895	113
29. Bina-Goona-Baran Rly.	,,	,,	1895	146
30. Gaekwar's Mehsana ,,	,,	Metre	1887	93
31. Hyderabad-Godavery Valley Rly.	,,	,,	1899	341
32. Shoranpur-Cochin Rly.	,,	,,	1902	65
33. Gwalior Light ,,	,,	2′0″	1899	126
34. West of India Portuguese.	Line in Foreign Territory.	Metre	1887	51

IV. Capital Outlay and Financial and Traffic Results

The total capital outlay on Indian railways open and under construction up to the end of 1902 was made up as follows :—

	Class of Railway.	Capital in Lakhs of Rupees.
1.	Guaranteed railways under old contracts	25,69
2.	" " " new "	58
3.	State Lines worked by Companies	202,09
4.	" " State	84,51
5.	Assisted Companies	16,59
6.	Native State Lines	18,10
7.	Lines in Foreign Territory	1,76
8.	District Board Lines	38
9.	Surveys, Collieries, and Lines wholly under construction ...	4,22
	Total ...	353,91

Calculated at the then prevailing rate of exchange of Rs. 15 to £1 this amounts to about £236 million.

The compilation of the annual administration report of Indian railways for presentation to Parliament was taken up, from the year 1882-83, by the Director-General of Railways in India. The Statement of Accounts and other money figures have thenceforward been recorded in rupees instead of in sterling. In view of the fluctuating value of silver and consequent disturbance in the sterling estimates it seems desirable to confine ourselves to rupee figures henceforth. The sterling figures of the previous periods may for practical purposes be converted into rupees at the rate of Rs. 10 to the Pound.

The main results of working Indian railways, taken as one system, for twenty years ending in 1902 are shown in the following two tables[1] :—

[1] Compiled from Annual Administration Report, 1902 and 1903.

TABLE "A"
Financial Results.

Year.	1882	1887	1892	1897	1902
I. Mileage worked ...	10,069	14,068	17,769	21,115	25,898
II. Capital Outlay (in Lakh Rs.)...	1,43,24	1,82,88	2,27,30	2,82,12	3,49,77
III. Gross earnings (in Lakh Rs.) ...	15,35	18,47	23,23	25,60	33,93
IV. Net earnings (in Lakh Rs.) ...	7,68	9,36	12,33	13,12	17,22
V. Gross earnings per mile per week ... ... Rs.	294	260	253	233	254
VI. Percentage of net earnings on Capital.	5·36	5·12	5·42	4·65	4·92
VII. Gain or loss to the State (in Lakh Rs.)[1] ...	+8	−2,00	−1,08	−1,97	+32

TABLE "B"
Traffic and Working Results.

Year.	1882	1887	1892	1897	1902
Mileage open :	10,069	14,068	17,769	21,115	25,898
I. Working expenses, in Lakh Rs.	7,67	9,10	10,90	12,48	16,70
II. Operating Ratio	49·9	49·3	46·9	48·7	49 2
III. Passenger Traffic :					
(a) Number carried, in Millions	59	95	127	151	197
(b) Earnings, in Lakh Rs. ...	4,08	5,35	6,91	7,62	10,27
(c) Average rate charged, in pies	2·7	2·5	2·5	2·5	2·5
IV. Goods Traffic :					
(a) Tons carried (Millions) ...	15	20	26	34	46
(b) Earnings, in Lakh Rs. ...	10,16	11,93	14,77	15,89	21,23
(c) Average rate per ton-mile, in pies.	7·9	7·2	6·7	6·4	5·7
V. Percentage of Passenger earnings to total.	26·6	28·9	29·7	29·7	30·2
VI. Percentage of Goods earnings to total.	66·1	64·0	63·9	62·0	62·5

Compiled from Annual Administration Report 1902, Appendix 7, p. 59.

It will be seen from table A that while railway mileage increased from 1882 to 1902 by about 158% the total capital outlay increased by more than 175%. This must not be assumed to be indicative of increased costs of construction per mile during the later years. The main reason for the disproportionate rise in capital outlay, shown above, is the purchase of old guaranteed lines by the state at various dates, on payment of capital costs together with such premia as were stipulated in the contracts.

The financial results to the state became encouraging. After years of losses, the railways in India began, in 1900, to show some profits to the state. The net gain during the three years 1900 to 1902 was about Rs. 175 lakhs. There were small temporary gains, during 1882 and 1891, but these were more than overweighed by the heavy losses on other years during the period. The highest losses incurred in a year were Rs. 200, Rs. 244, and Rs. 197 lakhs in 1887, 1896, and 1897 respectively.

In the calculation of net gains and losses at the time that portion of the annuity payments which represented redemption of capital had been included in the annual revenue charges, and therefore, the figures do not give the real result to the state of the working of railways. If the portions of the annuities which actually represented instalments of price paid for the railways were excluded then the figures for net gains would have been higher. The expenditure side of the account was further heavily weighted by the payments required by the terms of the two guaranteed railways which had not been purchased by 1902. They required payment of interest at a much higher rate than was prevailing at the time, together with a calculation of surplus profit at the rate of 22 pence to the rupee, the then current rate being about 16 pence.[1]

[1] Administration Report, 1902, p. 2.

The profits to the state during 1899-1902 came mostly from state lines worked by companies under new or modified contracts. Lines worked by guaranteed companies under old contracts, as well as those belonging to and directly worked by the state, continued to be heavily burdensome. The losses had to be met out of revenue or out of surplus profits from the first group.

The increase in gross earnings had been regular and steady during the whole period except in the years 1884, 1892, and 1896, when there were slight drops from the earnings of the previous year. The growth in the income, which was nearly 120%, had not been quite proportionate to the 158% increase in mileage. This can be accounted for by the lower average rates and fares of 5·68 and 2·51 pies per unit per mile in 1902, compared with 7·91 and 2·71 pies in 1882, the fact that many of the new lines had not been open long enough to secure steady traffic, and finally by some of them being in much less productive and prosperous tracts than those served by some of the older lines. The same facts are reflected in the lower gross earnings per mile per week.

A closer study of the figures from year to year reveals interesting explanation of the slight falls in the income in 1884, 1892, and 1896 from those of the immediately preceding years.[1] In 1884 and in 1896 the decreases were entirely due to lower goods traffic and earnings, as a result of slight increase in the rates. In 1892 the fall was also due to decreased goods earnings but this time the result was caused by a fall in the average rate charged while the increase in quantity had not sufficiently responded to it.

The percentage of net earnings on capital outlay had fallen in 1902 as compared with 1882. This was principally because of the enormous weighting of the capital by payment of premia on purchase of old lines. But as the rate of

[1] Administration Report, 1903, App. 10, p. 35.

interest ruling in later years was much below that prevailing in 1882 and the period before that, a slightly lower net earnings on capital outlay did not prevent the accumulation of net gains to the state.

The gains to the state were not merely confined to the net amount contributed by the railways to the treasury of the Government of India. Mr. Thomas Robertson showed that the improvement in communications in India had given great impetus to trade, and the development of trade had resulted in an increase of general revenues and customs. Between 1881 and 1901 the total value of imports and exports rose from about Rs. 143½ crores to Rs. 245¾ crores, customs revenue having increased from about Rs. 2 crores to Rs. 4·7 crores per annum. The gross revenues of the Government of India had in the meantime increased from Rs. 75·7 crores to Rs. 114·8 crores.[1] Thus every rupee spent on railways came back many times over to the country, and the liability incurred in the provision of railways had been fully covered by an all-round development and economic prosperity of the land.

The growth of traffic in the period under review was very large. The number of passengers carried per annum increased by 234%, and the tonnage of goods by 207%, between 1882 and 1902, while the increase in mileage was 158%. And in spite of lower charges the income from passengers and goods increased by 152% and 109% respectively. The annual average growth in quantity for the two kinds of traffic works out roughly at the rate of 11·7% for passengers and 10·3% for goods, while the average rates of growth of income therefrom were 7·6% and 5·4% respectively.

In the previous period, between 1871 and 1881, the increases in goods traffic and earnings were remarkable,

[1] Report of Mr. Thomas Robertson, C.V.O., 1903, Appendix 4, p. 66.

being 277% in tonnage and 132% in income, while passenger traffic and earnings grew by 189% in numbers and 87% in income. Between 1882 and 1902, however, the position had changed. Passenger traffic had progressed faster than goods traffic, and had been taking larger and larger share of the total gross earnings.

The great elasticity of passenger traffic in India was once more demonstrated, for the number of passengers increased by 234% with a fall in average rate of fares of only 7·3%. This was of course due to the increasing prosperity of the country and the construction of new lines. The quantity of goods increased by 207% only, while there was a fall in average rates for conveyance by 28·1%.

Of the total number of passengers conveyed in 1902, 87·32 per cent were of the third class. Of the goods traffic the most important were Grain and Pulses, Coal, Cotton, raw and manufactured, Oilseeds, Sugar, and Salt. Between them these six staples accounted for nearly 66% of the freight traffic and earnings.

The average length of haul for passengers improved, in the four years 1898 to 1902, from 38·53 miles to 40·03 miles while the average fares were 2·50 and 2·51 pies respectively. The length of haul for goods traffic in the same periods were 160·25 and 157·54 miles, the average rates charged being 6·00 pies and 5·68 pies respectively. The mileage increased by 17% between the two dates.

During the twenty years under review passenger traffic had dropped only once, in the year 1897, from the number and earnings of the preceding year. This occurred simultaneously with a rise in the average fare charged and probably the explanation lies therein. In goods traffic there had been falls in both quantity and earnings during 1884 and 1896. Here also the decrease followed the rise in rates in both the years. But these cannot be stated definitely to have causal connection, because the

nature of goods traffic depends on many factors. In India, conditions of traffic differ widely from place to place, and from year to year, consequent upon the habits of the people, agricultural conditions, political disturbances in the frontier or elsewhere, famines and scarcity, and the nature of foreign trade. General statements based upon figures for all Indian lines taken together should therefore be accepted with some amount of necessary reservation.

V. Working Results

The operating ratio remained more or less steady during the whole period, ranging between the highest percentage of 50·76, reached in 1884, and the lowest of 46·19 in 1895.

In 1902 this was 49·24 as against 46·79 of the previous year. This sudden rise was explained by large expenditure on renewals of permanent-way and rolling stock during the latter year. The conditions of working differed considerably from one line to another and the operating ratios of different lines were widely divergent. On the same line again great variations in working expenses were caused by the prevailing system of debiting revenue expenditure with a portion of annuity payments as well as with all expenses for repairs and renewals, incurred during the year. The contingency of certain repairs or renewals of stock arising in a particular year or not necessarily caused great variation in the total expenditure and thereby in the operating ratio. The statistical unit of operating ratio, therefore, formerly failed to measure the efficiency of working of Indian railways. This drawback was only removed in 1924-25 when the Depreciation Fund was created.

The operating ratios of some important lines, every fifth year from 1882, are given below :—

Proportion of working expenses to gross earnings :

	1882	1887	1892	1897	1902
1. East Indian Railway 5'6" gauge	36·9	31·7	28·5	29·5	36·6
2. North Western Ry. 5'6" ,,	...	72·7	64·2	54·4	58·6
3. N. W. Ry. (Military Section only) 5'6" ,,	...	...	131·1	93·7	112·4
4. Oudh & Rohilkhund Ry. ,,	65·8	52·8	41·3	56·6	51·3
5. Great Indian Peninsula Ry. ,,	48·0	46·8	49·9	67·0	50·2
6. Bengal & North Western Ry. Metre gauge	...	56·9	41·1	43·8	46·3
7. Southern Maharatta ,,	...	66·0	68·7	57·0	64·2
8. Rajputana-Malwa line ,,	53·1	50·8	41·0	46·6	47·5

The train, vehicle, and ton-mileage for the five years ending 1902 were as follows :[1]

Year.	Train-Mileage (in Millions).				Vehicle-Mileage (in Millions).			Ton-Mileage (in Millions).		
	Coaching.	Goods.	Mixed.	Total.	Coaching.	Goods.	Total.	Coaching.	Goods.	Total.
1898	17	28	25	71	552	1,102	1,654	6,468	14,605	21,073
1899	17	31	27	77	571	1,214	1,785	6,800	15,910	22,710
1900	18	34	29	84	612	1,323	1,935	7,326	17,231	24,558
1901	20	34	31	88	671	1,326	1,997	8,147	17,957	26,104
1902	22	36	32	92	743	1,354	2,097	8,958	18,764	27,723

The mileage was steadily increasing in each case, partly on account of increase in traffic handled, and partly as a result of the opening of new lines.

[1] Administration Report, 1902, p. 12. The figures for coaching ton-mileage were obtained by a system of converting the numbers into tons as recommended by the Statistics Revision Committee of 1880.

The working expenses per train-mile showed slight improvement between 1896 and 1902, from Rs. 1·80 to Rs. 1·79. Increases appeared in the expenditure of all departments, particularly in the upkeep of permanent-way and rolling stock. This was due to the heavy renewals which some of the older railways were called upon to undertake.[1]

As between different departments of the railways, treated as one system, the percentage of working expenses to gross earnings during the years 1892, 1897, and 1902 are shown in the following table :[2]

Year.	Engineering.	Locomotive.	Carriage & Wagon.	Traffic.	General.	Miscellaneous.
1892	11·94	15·84	4·06	7·59	5·04	2·45
1897	12·72	15·90	4·51	8·26	5·20	1·69
1902	11·49	17·06	5·02	8·07	4·83	2·59

These results appear to be quite consistent with the development of the railways, for while train and ton-mileage increase and the railways carry more traffic, the proportions of expenses on maintenance of way and works, and general expenses tend to fall, and the percentages of locomotive, carriage and wagons and traffic expenses tend to rise. If detailed figures were available perhaps this could be more clearly seen.

Between 1901 and 1903 Mr. Thomas Robertson critically examined the working of Indian Railways and made valuable suggestions for improvement.[3] These were briefly as follows :

As regards passenger traffic the speed of trains was found far from satisfactory. It did not exceed 31·25 miles

[1] Administrative Report, 1902, p. 13.

[2] Compiled from Administration Reports, 1892, 1897, and 1902.

[3] Robertson's Report on the Administration and Working of Indian Railways, 1903, Ch. III.

per hour for the fastest train, and fell as low as 13·99 miles for an ordinary train and 7·55 miles for a branch line train. In America, at the same time, over large tracts fairly comparable with India, the fast passenger trains maintained average speeds of 50 to 55 miles per hour, and the ordinary trains had records of 30 to 35 miles an hour. The slowness in India could not be justified by the poverty of traffic offering, for the average load of a train in India was greater than that in any part of the world.[1] The loss in speed was caused by unnecessarily long stoppages at stations and by the actually low booked speed for the trains. A very material acceleration of the speed was necessary in the interest of traffic, and the staff in India was considered quite capable of working trains with safety at higher speed.

In the second place, it was noted that the railways of India were insufficiently appreciative of the value of their third class passenger traffic. The less paying 1st and 2nd class traffic received all the attention, to the neglect of the third class, which formed the backbone of passenger business of every railway in India. The lowest class carriages were in many instances not kept clean and were often much overcrowded. At times, pilgrims were even conveyed in goods wagons. In addition to the inadequacy of the stock the treatment to which third class passengers were subjected called for very special attention. Facilities for obtaining a good supply of drinking water and meals while travelling were largely denied them, and above all they were subjected to unauthorised charges both by the station and train staff and the police at various points. Station masters were reported to be in the habit of considerably increasing their incomes through illegal levies of gratuities both from passengers and from traders.[2]

Robertson's Report, p. 58.
Robertson's Report, p. 61.

Lighting of the trains was unsatisfactory, as also the provision of communication between passengers and guards. It was urged that attention should be drawn to these two matters through legislation, requiring every railway administration to make some standardised and adequate arrangement for all trains within a specified number of years.

As to goods traffic also, the time taken by goods in transit was so long as seriously to interfere with the proper development of traffic. On some of the main lines, and between some of the principal centres goods moved at speeds varying on an average from 3·7 to 12 miles per hour, the movements between stations of less importance being much worse. With coal traffic to Calcutta by the East Indian Railway, delays resulting in average speeds of 2 to 5 miles an hour for a journey of about 180 miles were not uncommon.[1]

The delays were chiefly caused at starting, at intermediate and at engine-changing stations and yards, and at junctions *en route*. The methods of loading wagons and trains lacked forethought and needed alteration, in order to avoid transhipment in transit and unnecessary detention at shunting yards and junctions. Moreover, a number of through trains for goods as well as for passengers was needed to improve the speed all round. Mr. Thomas Robertson declared that if more efficient methods of working were introduced, the average time taken by goods in transit in India could be reduced to half or one-third of the then record, without increasing the actual booked speed of trains. The advantages effected through an acceleration of goods traffic would be enormous, and would be reflected in better wagon user, saving of capital, increase in stock, minimised work at shunting and intermediate stations, and junctions,

Robertson's Report, pp. 65-66.

saving in number of sidings, and staff for working at marshalling yards, etc.

The average load of wagons and trains, as compared with their carrying capacity, was found to be generally satisfactory.

The rolling stock on Indian railways was not well adapted to the requirements of traffic, either in design or utility, and fell short, to a serious extent, of what was necessary for economical and efficient working. Engines had the maximum load of about 1,000 tons while in America loads of 3,000 tons and even 4,000 tons were quite common. In addition to the need for engines of higher power much room was left for improved and balanced booking of engine work, and reduction in the delay for repairs. The average number of engines under repairs was over 15 per cent of the total on the line, while in England and America it did not exceed 8 per cent. For passenger vehicles the bogie carriages, that had been first introduced in 1884, proved particularly suited to Indian conditions, but were not yet in use in sufficient numbers. It was recommended that the railways should stop any further construction of four-wheelers, and that all vehicles, including the third class, should be provided with lavatories.

The provision of four classes of carriages necessarily increases the dead weight of trains and the cost of working. Mr. Thomas Robertson therefore recommended a reduction in the number of classes. The average number of passengers of different classes in each train, in 1901, were as follows:—

Gauge	1st	2nd	Inter.	3rd	Season Tickets	Total
Broad	1·5	5·5	13·6	173·7	4·6	198·8
Metre	0·9	3·5	3·6	217·4	0·6	225·9
Broad & Metre.	1·3	4·9	10·7	186·7	3·4	206·9

As regards goods vehicles, the introduction of the high-capacity American bogie-type wagons was proposed, particularly for the conveyance of heavy low-class traffic which accounted for about 80 per cent of the whole traffic conveyed. This would secure much better paying load with greatly reduced dead-weight to haul, and would bring about numerous other economies.

With respect to the constant demand for increase of wagon stock it was emphasised that, instead of indiscriminate additions to stock, attempts should be made to improve the working by speeding up the trains, and by better loading, marshalling, transfer and terminal arrangements. There was also need for speeding up repairs to wagons.

In the working of trains the universal adoption of the absolute block system was strongly urged. The safety devices on Indian railways were far from satisfactory. Even on the main routes where the fastest trains ran, the interlocking of points and signals had been neglected at most stations. On some of the railways the provision of interlocking was still in an experimental stage, while others again had done nothing in that direction. There was also marked absence of uniformity in the fixed signals on many of the railways. The question had been under consideration of the Government of India for sometime past, and an early decision was urgently called for.

The provision of automatic brakes on all coaching stock was in fair progress, although much still remained to be done. Following the practice in the United States the fitting of goods vehicles also with automatic brakes was recommended.

Suggestions were also made for improvement in permanent-way and ballasting arrangements, dust prevention, reduction of gradients, and the supervision, employment, as well as training of the signalmen and staff.

With the enquiries made by Mr. Thomas Robertson a new era in Indian Railway operating began, and in the

years that followed systematic and steady improvements in maintenance, design, construction and working, etc., had been made.

VI. Miscellaneous: Conferences, Accidents, Staff, Statistics, etc.

The first regular conference of Indian Railway delegates was held in 1880, when various matters of dispute were settled, and future working agreed upon. It then became almost a regular feature with the Railway Department of the Government of India to call together in conference the representatives of different railway administrations in the country. In the absence of a Railway Clearing House or any other institution where the various railway agencies could meet and discuss matters of more or less vital importance, these railway conferences served very useful purpose.

In the railway conference of September 1882, the rules for the interchange of rolling-stock were once more discussed and finally adopted. Similar meetings were held also in 1888, 1893, 1899, 1900, and 1902. As a result of the *esprit de corps* inspired by these conferences some railway delegates, in February 1902, proposed the formation of a permanent body called the Chamber of Indian Railways, independent of government. This suggestion was given effect to in 1903 when the Indian Railway Conference Association was established. The Association has played ever since a very important part in bringing about much healthy agreement in working, and simplification of construction, operation, and commercial practice.

A traffic conference was held in 1884, with a view to simplify the existing goods tariff, but little progress was made. In 1893 regulations were issued for inter-railway payments for the use of foreign-line wagons. These rules

were revised in the conference of 1899, when the principle of payment on the basis of time exclusively, instead of on a combination of mileage and time, was adopted. From January 1901, the modified regulations of the Indian Railway Conference were given effect to, the members having agreed to be bound to comply with certain decisions of the meetings.

Apart from the conference of railway delegates in general, special meetings were also arranged, to deal with matters of more or less specific interest. In July 1895, a Claims Arbitration Committee was established by the railways in South India. A similar Committee was instituted for Northern India in 1901. In 1896, the Viceroy called together for the first time a conference of various Provincial and Central Government Departments interested in railway development, to settle the railway extension programme and financial arrangements for the years immediately following. This became an annual feature for some time. In the same year, 1896, revised general rules for working the railways in India were put in force.

An important step taken was the appointment by the Governor-General in Council, in 1899, of a temporary travelling Railway Commission, which was required to enquire into various local demands and to settle disputes. It was expected that this body would develop into the permanent Railway Commission which was provided under the Indian Railway Act IX of 1890. The Commission met in 1899 and in 1900, at Bombay, Madras, and Karachi, and brought about settlements of many important questions including work at the port of Bombay, points of division of the East Coast line between Madras, and Bengal-Nagpore railways, junction of the Jodhpore line with the North-Western Railway, etc. It was then dissolved, in 1901, and had never been revived since.

In 1901, the Secretary of State advised the Government of India to get together the locomotive superintendents of

different railways, in order to obtain from them suggestions about the standardisation of locomotives. In the same year, a conference was called at Calcutta, of mercantile and railway bodies, with a view to discuss the opening up of the Jherria coal fields, together with a more direct approach to Calcutta from the north. The Grand Chord section between Dhanbad and Gya, on the East Indian Railway, was thereupon undertaken. In 1902, the Director of Railway construction was deputed to consult English authorities in regard to revision of the Indian standard dimensions, and the placing of orders for rolling stock in advance.

In the beginning of the twentieth century the direct connection of India with Ceylon by a through railway line was projected, but the Government of India could not undertake or encourage the work principally for financial reasons.

As regards accidents, the twentieth century began with very unsatisfactory records. Casualties had increased both amongst passengers and railway servants. Accidents were largely due to (*i*) damage to the permanent way on account of floods and rainfall, (*ii*) non-compliance with speed and signalling regulations, and (*iii*) wear and tear of rolling-stock. Attention was drawn to the great urgency of equipping all passenger trains with modern safety devices including automatic vacuum brakes, communication chains, and electric lighting. The first train fitted with vacuum brakes was run in 1892, on the East Indian Railway, and although rapid progress was made in the following ten years much was left to be done. Mr. Thomas Robertson, in this connection, laid stress upon a better training, examination, and periodical sight-testing of signalmen and drivers.

The following is a statement of accidents during the three years 1900-1902 :—

Year.	Passengers.		Rly. servants.		Other persons.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1900	97	343	257	468	911	296	1,265	1,106
1901	94	298	275	458	745	214	1,114	970
1902	225	473	306	459	700	209	1,231	1,141

The number of passengers carried in 1902 was about 196½ million, so that the total killed and injured were nearly 3·5 per million carried.

The number of employees of different races was, in 1902, as follows :

Europeans 5,875; Eurasians 8,269; Indians 378,373. Of the total nearly 94·6 per cent were Indians, but hardly any superior post, or one of much reponsibility was held by any of them. Of the Europeans and Eurasians or Anglo-Indians employed 12,022 were enrolled as volunteers in an auxiliary force, the Indian employees being kept out.

The police force, for the maintenance of law and order on railways and for the protection of railway property, was provided by the civil department, the state bearing, except in the case of state-worked lines and the old guaranteed railways, three-tenths, and the railways paying seven-tenths of the expenses incurred.

There was a provident fund instituted in connection with every railway in India by the close of the last century. The money in this fund could not be attached by courts of law, nor could it be alienated or hypothecated by the employee. Every railway servant, who was not a menial, nor entitled to pension, was required to contribute to the provident fund amounts varying on different railways, but not exceeding one-twelfth of his salary. At the close of each half-year, the railways distributed, as bonus to the depositors, a first contribution equal to one half of their subscriptions. If earnings permitted, a second contribution

not exceeding one-half of the subscriptions or one per cent of net earnings, was made.

Fines inflicted on, and bonus contributions to the provident fund forfeited by employees were credited to the Fine fund. On most of the railways this money went back to the railway servants in the shape of contributions to clubs, schools, etc., or in the relief of families left destitute.

On the larger railways, schools were provided at various centres for the general education of the children of railway employees as well as for certain class of the servants themselves. The fees charged were on a graduated scale according to the earnings of the emyloyees. Government allowed certain grants towards the maintenance of the schools, and deficits were made good from the railway contributions or from the Fine fund.

The compilation of railway statistics underwent many experiments during the period under review. The American plan of detailed enquiry into figures and their analysis influenced the Indian railways in the beginning. Following upon the report of the Committee of 1880 for the revision of statistics, a more scientific but too elaborate collection of data was undertaken. The presentation of these statistics necessitated the publication of the annual administration report in two volumes. The second part, dealing with the details, was invariably delayed too much to be of practical use. In 1889-90 a new classification of the railways was adopted, grouping certain branch and feeder lines with the main. Two years later, the classification was again changed, with a view to show the results of working of broad and metre gauge railways separately. The acquisition of lines by the state, leasing out some to companies for working, the appointment of new companies under varying terms, the conversion of some lines into broad gauge, and the opening of railways in the north-west frontier, mostly for strategic purposes,

complicated the statistics so much that comparisons between different lines, or between different periods with the same line became difficult, if not impossible. Moreover, when comparing results on Indian railways, allowances must be made liberally for varying circumstances, including nature and condition of working of traffic, regular and seasonal variations in the up and down movements, gradients, availability of fuel, weather conditions, etc.[1] In comparing capital outlay and financial results, there were great difficulties due to varying rates of exchange and to the payment of the purchase price of some of the lines in the form of annuities. Mr. Thomas Robertson further drew attention to the evils arising out of the calculation of revenue and expenditure half-yearly, instead of by periods of one year. The companies had, under the circumstances, a tendency to place all large expenses in one half-year, so that their participation in the surplus profits might be higher in the other.

In February 1901, it was decided to curtail and condense the information given in the annual reports so that economy might be effected in the presentation. The two volumes were combined into one, and without eliminating any valuable information, the publication was much expedited. The administration reports were thenceforward issued for calendar years, instead of for financial years, up to 1912.

Demand for measures for the convenience and comfort of the lowest class passengers continued unabated. Attention was drawn to the matter from time to time, and the Government of India advised the railways, in 1884, in 1895, and in subsequent years, to make adequate provisions for water supply, refreshments, and lavatories in the trains. Much was, however, left to be done in the direction, and Mr. Thomas Robertson strongly criticised the arrangements prevailing in 1902.[2]

[1] Administration Report, 1890-91.

[2] Robertson's Report on the Administration and Working of Indian Railways, 1903, pp. 60-61.

CHAPTER VII

POLICY, FINANCES, MANAGEMENT, AND RATES AND FARES, 1903 TO 1924-25

1. *Continuance of the Policy of employing both State and Company Agencies.*

With the beginning of the twentieth century a new era in the development of Indian railways began. Traffic had grown enormously and the railways ceased to be a burden on the state. There was no need to question the soundness of the railway policy.

The requirements of traffic were constantly out-growing railway capacity. Mr. Thomas Robertson, C.V.O., was accordingly appointed in 1901, to enquire, as a Special Commissioner, into the admininstration and working of the Indian railways.

Among other important matters, the question of State *vs.* Company management engaged his attention. A marked superiority in practical management of the company-worked railways over those worked by the state, or *vice versa,* was not discovered. The principal objections to state-management appeared to be the following :

(*i*) Difficulty in adjudicating disputes in which government was necessarily an interested party.

(*ii*) Possible sacrifice of the interests of state railways to political or strategic considerations.

(*iii*) Sanctions for the construction of other railways might be withheld if considered injurious to any state railway.

(*iv*) Difficulty of managing the staff on strictly commercial lines, when part of the staff was pensionable and was

not confined to one railway. This includes difficulties in getting rid of inefficient men, ignoring the claims of seniority, etc.

(*v*) The absence of that healthy and beneficial control which a strong and judicious Board of Directors was capable of exercising.

The main arguments in favour were summed up as follows :

(*i*) That, for military and strategic reasons some railways should be under government management, particularly the North-Western Railway, and that the training of military officers in railway duties would thereby be facilitated.

(*ii*) That state lines would give good training ground for government supervising staff; and

(*iii*) That they would afford excellent opportunity to government to provide object lessons to all other railways of the best practice in railway management.[1]

Mr. Thomas Robertson thought that the disadvantages of state-management outweighed its advantages. The majority of evils in India was considered due to the system of working some lines by the state and some through companies. If the duality of system were eliminated, most of the objections to state-management would disappear. It was accordingly recommended that the two systems should not be in operation simultaneously, and in the best interests of the country all lines should be leased out to companies. As regards new lines, he was of opinion, that the proper course would be "to revert to a system of guarantee, which is much the cheapest for the country failing direct borrowing by the government."[2] The agency of companies, he

[1] Robertson's Report on the Administration and Working of Indian Railways, pp. 22-26.

[2] Robertson's Report on the Administration and Working of Indian Railways, p. 45.

argued, had some real advantages, although admittedly they cost more than the average rate at which the government could borrow.

Public opinion in India had, however, ceased to remain inarticulate. With the birth of Indian nationalism strong feeling against English companies grew up, and this feeling found expression in an ever-increasing demand for state-management of the railways. The Government of India also was not inclined to lease out all the lines to companies. The policy shaped after 1884, therefore, continued to govern the development of Indian railways throughout the whole period.

In 1908, a special Committee, presided over by Sir James Mackay (Lord Inchcape), examined the problems of Indian railway finance and administration. The government of India was accused of failing to encourage private enterprise in accordance with the settled policy of employing both state and private agency. The Committee found the charge without any foundation. There was no case in which real private enterprise failed to receive state encouragement, although attempts to exploit the country for the benefit of the concessionaires by means of schemes which would be dangerous to the tax-payer or to existing lines, had been consistently and rightly resisted by the Government of India.[1] Recommendations were, however, made to transfer some of the state-managed lines to companies, to extend the leases of the companies to longer terms, up to 50 years, to relieve them of detailed and vexatious control, and otherwise to make railway undertaking more attractive to private parties.[2] The Government of

[1] Mackay Committee Report, p. 11.

[2] Mackay Committee Report, pp. 19-21. Sir F. Upcott, Chairman of the Railway Board, proposed a scheme by which part of the government's railway property would be sold or alienated to companies.

India thereupon revised the Branch line terms, but maintained the main policy undisturbed. The termination of leases and the acquisition of lines had, by the time, become regular, and whenever opportunity presented the state purchased the railways. Thus the most outstanding feature of the railway policy, during the whole period 1882 to 1924, was the acquisition of ownership of lines by the state, except small branch lines constructed under special terms, and the retransfer of those for management to newly modelled companies, whenever that could be secured with advantage. The aim kept in view always was to cure the defects of some of the previous contracts, and one or more of the following methods were applied to secure more favourable financial conditions for the state : Reduction of the amount of capital retained by the companies in the undertakings ; reduction of the rate of interest guaranteed; and modification of the terms of contract so as to provide for a larger share in the surplus profits for the state.

Indian opinion, however, was far from satisfied with this policy. The ill-treatment of third class passengers, the alleged manipulation of rates and fares to cripple Indian industries and trade, and the chronic inability of the railways to keep up a supply of wagons adequate to the needs of traffic, were all considered to be due to the neglect of the companies, managing the railways, to look after the interests of the country. It was ardently contended that direct state management of state-owned lines would provide much more satisfactory results, being more amenable to public demands. Instances from European and colonial countries were often quoted to show how successfully the states were managing their own railways. Before the contract with the South Indian Railway Company fell in, in 1910, the Government of India was urged to take that line over under state-management. But the Secretary of State renewed the lease as it expired in 1910. This was characterised as an

action "over the heads of the Government of Madras, and of the Government of India, and, in spite of great grievances of the public."[1]

In 1910, 1912, and 1913, the question of policy was raised in the Viceroy's Legislative Council, during budget debates and through interpellations. In 1914, 1915, 1917 and 1918, definite resolutions were moved, urging the appointment of a committee of enquiry or the adoption of direct state management as a panacea to many of the evils complained of.[2] Indian public opinion appeared to be solidly behind these demands.

In the meantime, certain complicated questions arose, as between the Railway Board and the companies, following upon some administrative changes. The Secretary of State felt that these questions could be better dealt with by a conference rather than by correspondence. Accordingly, a meeting was called together in 1911-1912, consisting of the Chairman of the Railway Board and other officers of government on the one hand, and the Agents and some of the Directors of the railway companies on the other. Lord Inchcape was appointed to preside over the conference which met privately. Indian opinion became suspicious of the purpose of the conference, and apprehended that further efforts were being made by the English companies to obtain special privileges in the railway field.[3]

With the outbreak of War the difficulties of Indian railway management became acute. The public demand for a change of policy thereupon grew stronger. In July 1916,

[1] Speech of Sir Purshottamdas Thakurdas in the Indian Legislative Assembly on 20th September 1924, p. 3646, Vol. IV, Part VI, Proceedings.

[2] Viceroy's Legislative Council Proceedings, dated 9th March 1910, 1st March 1912, 17th September 1913, 24th February 1914, 24th March 1915, 25th September 1917 and 12th March 1918. The names of Mr. G. K. Gokhale, Sir V. D. Thackersay, Sir Ibrahim Rahimtoola and Mr. Vijayaraghavacharya are notable in this connection.

[3] Hon'ble Mr. Clark's reply to Hon'ble Mr. G. K. Gokhale's resolution in the Viceroy's Legislative Council, dated 23rd February 1912.

the Railway Board issued a circular to railway agents, local governments, and certain commercial bodies and associations, asking them various questions, to find out whether state or company management had rendered better service to the public in the everyday experience of those having business dealings with the railways.[1]

In reply to this circular the Governments of Bombay and Madras expressed themselves in favour of state-management. The Governor in Council, Bengal, recorded his preference for state-management, with a certain proviso, in view of the preponderating weight of European commercial opinion in favour of company-management. The other local governments considered that both company and state managements might conveniently be allowed to continue with some improvements. Of the commercial bodies, the Indian chambers and associations generally favoured state management, while European chambers supported company management.

The time for the termination of the contract of the East Indian Railway was in the meantime drawing near. As one of the oldest and most important lines in the country the question of its future management engaged great attention. At the end of 1917 the Secretary of State gave notice for the termination of the contract with the East Indian Railway Company.[2]

As the outcome of the discussion on the question of future management of the East Indian Railway, the Secretary of State appointed, in November 1920, the Indian Railway Committee under the chairmanship of Sir William Acworth. As a temporary measure the East Indian Railway Company's contract was extended to the end of 1924.

[1] Railway Board's Circular, dated 10th July 1916.

[2] Resolution of Sir Ibrahim Rahimtoola in the Viceroy's Legislative Council, dated 25th September 1917, and the reply thereto by Sir George Barnes.

The terms of reference of the Committee included the request to consider, more especially as regards railways owned by the state, the relative advantages, financial and administrative, in the special circumstances of India, of the following methods of management :—

"(*a*) direct state management; (*b*) management through a company domiciled in England with a Board sitting in London; (*c*) management through a company domiciled in India and with a Board sitting in India; and (*d*) management through a combination of (*b*) and (*c*)." The Committee was further invited "to advise as to the policy to be adopted as and when the existing contracts with the several railway companies can be determined."[1]

The Committee was "unanimous in thinking that Indian Railways should be managed not from London but from India, and in recommending that the existing contracts with the English guaranteed companies should be permitted to expire at their respective dates and should not be renewed."[2] It ruled out both the continuance of English domiciled companies, as well as a combination of English and Indian companies. With regard to the method of management in India, however, the members were divided in opinion, some advocating direct state management, others proposing that some at least of the undertakings should be entrusted to the management of companies domiciled in India.

The status of the guaranteed companies was reviewed, and it was shown that the companies hardly deserved the names of railway companies at all. They were neither joint owners of the property nor were their debentures chargeable on assets. Their part in financing the railways of India had been quite unimportant in later years, inasmuch as

[1] Acworth Committee Report, 1920-21, pp. 3 and 4.

[2] Acworth Committee Report, p. 6.

the Secretary of State had steadily refused to accede to the suggestions of both Mr. Thomas Robertson and Sir James Mackay (Lord Inchcape) to permit the companies a larger interest in the undertakings. A reversal of the policy in the direction of allowing the English companies to increase their share capital would meet with very strong opposition from Indian public opinion that had unequivocably insisted on the transfer to India of all control, both financial and administrative, whether under state or company management. Conditions had changed immensely since 1884 when the new policy with regard to English guaranteed companies was finally shaped, and they were further changing very rapidly. The Committee therefore recorded that " whatever may have been the position in the past we think the advantages of English management are now outweighed by the great disadvantages of absentee control and the difficulty of keeping in close touch with the modern social and trade conditions of India." [1]

The Chairman and four members advocated state management. They further observed that the employment of English guaranteed companies in India represented a system essentially unworkable. A great deal can be said for company management when a company has full responsibility for the success of an undertaking, invests its own money, and manages its own property. It usually conducts its business with more enterprise, economy, and flexibility, than are attainable in business directly managed by the state. But " the English companies ceased many years ago to be companies in this sense...........Our experience and investigations in India have led us to the quite definite conclusion that the system never has worked satisfactorily and cannot be made to do so." [2] The management of the

[1] Acworth Committee Report.
[2] *Ibid*, p. 65.

undertakings is nominally entrusted to several guaranteed companies. But these do not and cannot manage on account of meticulous government control of every detail of expenditure. Neither does the government manage; it only controls and restrains. "The utmost wisdom on the part of the government cannot prevent injury caused by unwise and unprogressive policy of a company's board."[1]

Dealing with the alternative of management by Indian domiciled companies, these members observed, that under the circumstances, the establishment of companies with real independence was impossible. The change of domicile of the board of directors would hardly make the scheme workable. The division of responsibility between the government and the board of directors was in large measure responsible for the failure of the railways to meet their obligations to the public. Executive officers with divided allegiance can never do the best work of which they are capable. The position hitherto occupied by the boards in England was fundamentally incompatible with successful administration.

The Indian boards would succeed to the same status as it was difficult to break away from the force of tradition. Moreover, it would be unwise to ignore public opinion in India, and to try to force company-management in an atmosphere of hostility.

Unless management is substantially independent, the justification for the existence of a company disappears. In India the companies would at best contribute only small amounts to the total capital requirements. Such small share would not justify entrusting them with substantially independent management. Company management, whether English or Indian, thus becomes out of the question. In the case of the East Indian Railway an additional reason in favour of direct state management was the competitive nature of this line with the Oudh and Rohilkhund Railway.

[1] Acworth Committee Report.

Approaching the question, therefore, not from one of national sentiment, but purely from the practical point of view, Sir William Acworth and four members of the Committee declared themselves "in agreement with the almost unanimous opinion of Indian witnesses," and recommended "that the undertakings of guaranteed companies, as and when the contracts fall in, be entrusted to the direct management of the state."[1] A condition precedent was however laid down that the recommendations with respect to financial and administrative reforms of the government machinery should be adopted at least substantially.

The remaining five members of the Committee proposed the employment of companies of Indian domicile. They refused to admit that the system prevailing in India deserved such unqualified condemnation as Sir William and his colleagues had recorded, and brought into prominence the defects of state management, both on political grounds as well as economic. Arguments for nationalisation did not, in their opinion, apply to Indian conditions. Government alone could not be expected to supply the funds that were so urgently required. The dangers of interference by the growingly democratic legislature with railway management should not be ignored. The complaints against railway working in India were not peculiar to company-managed lines, and the defects of company management were not beyond cure. Finally, it was argued, that state operation was bound to be less recuperative and would be slow in getting back to normal conditions.

These arguments were controverted by the chairman of the Committee and his supporters. Government, they said, must find adequate funds and could surely get money if it paid the price. State management in India was

1 Acworth Committee Report, p. 68.

equally efficient as company management, and in examining the proper course of action to be adopted with reference to the conditions of India no useful purpose would be served by bringing up the general question of state *vs.* company management. Comparisons with foreign countries were not of much value, and were irrelevant, because, in India, company management, "in the ordinary meaning of the words does not exist, and cannot be brought into existence."[1] Moreover, all the evils ascribed to state management such as the non-commercial employment of the staff, neglect of financial requirements, etc., were not necessarily attendant on the system and could be easily removed.

Such definite pronouncements from an eminent authority, especially from Sir William Acworth whose prepossession in favour of private management was well known, very much strengthened Indian public opinion. The temporary extension of the East Indian Railway company's contract gave some breathing time to government, but the insistence of the Indian legislature and the public did not cease. In June 1922, the Government of India addressed the local governments and chambers of commerce enquiring into the feasibility of Indian companies that could take over the management of the East Indian Railway, or the Great Indian Peninsula Railway, whose contract was also to expire in June 1925.

A Railway Finance Committee was appointed immediately after the publication of the Acworth Committee Report with a view to consider the recommendations for financial reforms which were placed at the forefront. On the approval of this Finance Committee the Indian Legislative Assembly voted in March 1922 the sum of Rs. 150 crores, to be spent in the following 5 years on capital account of the railways. The Central Railway Advisory

[1] Acworth Committee Report, p. 70.

Council was appointed shortly afterwards and the question of state *vs.* company management was taken up by it.

The delay in the declaration of the new policy made Indian opinion more restive than ever, and again and again the government was pressed to come to a decision.[1] Rumours found ready currency that the East Indian and the Oudh and Rohilkhund Railways were going to be handed over to some newly constituted company after amalgamation of the two lines.[2]

So far as the East Indian, and Great Indian Peninsula Railways were concerned, government thought that state management was inevitable, as no satisfactory alternative could be devised and introduced in a short time. But it was believed that it would be necessary to maintain a substantial portion of Indian railways under company management. The period of direct state management would be utilised to effect grouping and territorial adjustments which were felt necessary for economical working. It was agreed that all railways should be transferred to Indian control as contracts expired, but government was opposed to closing the door against a return to company management. "As India is more and more democratised, she will find state management more and more expensive, more and more inefficient, as every other democratic country in the world has found it."[3] The government proposal was rejected by the Assembly, and a simple resolution advising the taking over by the state of the management of the East Indian and the Great Indian Peninsula Railways on the expiry of their leases, was adopted.

[1] Motions in the Legislative Assembly in September 1922 and February 1923.

[2] Question by Mr. K. Ahmed in the Legislative Assembly, dated 24th January 1922.

[3] Speech of Hon'ble C. A. Innes, Commerce and Industries Member of Viceroy's Council, on the Resolution on State *vs.* Company management, dated 27th February 1923. Legislative Assembly Proceedings, Vol. III, Part IV.

The Indian Legislative Assembly thereby desisted from committing itself to a future policy which in some cases would require many years to work out.

Even after this very definite expression of opinion by the legislature, government continued to seek the aid of some suitable private agency to whom the management of one or more of the state-managed lines could be handed.[1] The Legislative Assembly adopted, without division, a resolution demanding that every future contract for the working of state railways by a company should be placed before the Assembly prior to final confirmation, but government did not accept it. It was then feared that "the government may, above the head of the Assembly, and indeed without their knowledge, enter into a contract,—either themselves, or the Secretary of State may do it,—to have either the East Indian Railway, or the Great Indian Peninsula Railway, or any of the railways of India, managed by a company."[2] When the important question of separation of Railway Finance from General Finance came up in September 1924, a vigorous fight was put up by the Indian members, with a view to secure permanency for the policy of state-management. Their insistence was so keen, and the attitude of the government was at first so unbending that it was at one time feared that the very salutary reform of financial separation would never come about. Ultimately, a compromise was reached and the resolution for the separation was passed with the addition of the following clause, which has practically settled the question of state-management. "In view of the fact that the Assembly adheres to the Resolution passed in February 1923, in favour of state-management of Indian railways, these arrangements (the

[1] Administration Report, 1921-22, Vol. I, p. 6.

[2] Speech of Sir Purshotttamdas Thakurdas on his Amendment to the Resolution on Separation of Railway Finance in the Legislative Assembly, on 20th September 1924.

financial separation and the convention for railway contribution) shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing state-managed railways remain under state-management. But if in spite of the Assembly's Resolution above referred to government should enter on any negotiations for the transfer of any of the above railways to company management, such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railways to company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arranagements in this Resolution." [1]

The East Indian and the Great Indian Peninsula Railways were duly taken over to state management in January and July 1925 respectively. The contract of the Burma Railways fell in at the end of 1928, and that line has also been taken over by the state. It is now practically settled that the following state-owned railways will also come under direct state-management as their contracts expire at the following dates:

Assam-Bengal, 1931.
Madras and Southern Mahratta, 1937.
Bombay Baroda and Central India, 1941.
South Indian, 1945.
Bengal Nagpore, 1950.

So far as lines other than state-owned are concerned, no definite policy has as yet been formulated. The first opportunity for taking over one of such lines comes in 1932 when the state can determine the present contract with the Bengal

[1] Clause 9 of the Resolution on Separation of Railway Finance in India passed by the Assembly on 20th September 1924.

and North-Western Railway Company. Financial considerations and the state of credit of the Government of India at the time of purchase must be the principal factors that will determine the policy with regard to such lines.

II. Branch Line Policy

The Government of India continued for a long time the same policy, as was declared in 1896, for securing the assistance of companies with rupee capital, in the construction of small branches or feeder lines. The state of the money market, however, had by the beginning of the present century undergone so much change that the terms of 1896 ceased to be attractive to private parties. In fact, between 1898 and 1909, only two small companies were formed, the Ahmedabad-Dholka (1901) and the Amritsar-Patti (1905).

Mr. Thomas Robertson, in the course of his enquiry in 1903 discovered that the contracts with the guaranteed railways of the time—both for main as well as for branch lines—had numerous anomalies. He therefore recommended considerable alteration in the terms.[1] His main proposals consisted in raising the rate of guarantee to 4 per cent, permission to pay interest at the same rate during construction out of capital, relaxation of government control as regards standard and gauge, extension of the period of lease, and removal of the maximum limit of premium over capital expenditure in the determination of purchase price.

It was also pointed out that the number of companies with which government had to deal should be kept down. It would "be more convenient, where the main lines are worked by companies, to employ the main line companies to finance all branches to, or extensions of, their own lines."[2] If, however, the employment of existing companies

[1] Robertson's Report on the Administration of Indian Railways, 1903, pp. 45-52.

[2] Robertson's Report, p. 52.

was altogether impracticable, to prevent conflict of interest and to simplify control, one subsidiary branch line company might be formed in connection with each recognised main line. The same procedure was proposed for state-owned lines as well.

The Government of India could not accept such drastic proposals but the question of revision of branch line terms engaged attention. The Mackay Committee of 1908 reaffirmed some of the opinion of Mr. Thomas Robertson and recommended that "as far as possible the trunk lines should own, as well as construct and work, their branches."[1] It was pointed out that the method of obtaining capital through independent branch line companies was not only expensive, but often resulted in trouble. As a rule the independent companies required a higher rate of interest than that at which money could be borrowed either by the Secretary of State or by the trunk line company. A considerable amount of money was required on promotion and preliminary expenses, and on the maintenance of office establishment. Further, in some cases, the branch lines had not fulfilled expectations and the government had been compelled either to grant new terms or to take over the lines.

In 1910, the Railway Board, in supersession of all previous orders on the subject, issued new offers. These terms were "considerably more liberal in several respects,"[2] and were mainly as follows :—

1. Government would grant financial assistance either in the form of a guarantee, or of a rebate to the branch line company from the *net* earnings of the main line from interchanged traffic, as under the terms of 1896; but a rebate and a guarantee would not be granted simultaneously in respect of the same branch line.

[1] Mackay Committee Report, 1908, para. 28.

[2] Evidence of Mr. W. Stantiall to Acworth Committee, Note iv, p. 13, Vol. II.

2. The rate of dividend guaranteed was $3\frac{1}{2}\%$ subject to the condition that surplus profits in excess of 5% on capital expenditure would be shared equally between the government and the company. The guarantee would be in force till the line was purchased by the state, and would be payable in rupees.

3. As an alternative, a rebate was to be granted to the branch line company, out of the net earnings of the main line, to make up a dividend of 5%, provided that if the net earnings of the branch, exclusive of any rebate, exceeded 5% on its capital expenditure, then the surplus would be equally divided between the government and the company.

4. Government reserved the right of purchase at any time, on one year's notice, when the gauge of the branch had to be changed, or the conversion and through extension of the branch was desired and the company could not execute it. In such a case twenty-five times the average net earnings (excluding payment for guarantee or rebate) during three years preceding purchase, or 115% of the capital expenditure, whichever was greater, would be paid.

In ordinary circumstances government would have the right of purchase after 30 years, or at subsequent intervals of 10 years, on one year's previous notice. The price payable would then be as before, subject to a maximum of 120% and a minimum of 100% of the capital expenditure, all payments being made on a rupee basis.

In November 1913. these terms were again revised.[1] The main provisions were kept unaltered but the guarantee or rebate was to be calculated "on the approved paid-up share capital of the company to the end of the financial year," instead of on capital expenditure.

In March 1914, a further modification of the terms was made, by which a branch line company was permitted to

[1] Resolution No. 457 R. P. Ry. Dept., dated 14th November 1913.

raise capital, partly under guarantee, and partly under rebate terms, although a rebate and a guarantee were not to be granted simultaneously in respect of the same capital.[1]

To encourage the construction of branch lines in Assam and in Burma, the governments of those provinces further proposed, in 1915, to contribute from local revenues amounts of money that would secure to the branch railway company a guaranteed dividend of $4\frac{1}{2}\%$, that is 1% in excess of the guarantee provided by the Government of India.[2] The Arrakan Light railway in Burma secured a further grant of 1% from the Arrakan Flotilla Company.

Slight variations in these terms were made in actual practice to suit the requirements of each line.

No less than thirty branch line companies were in existence at the end of 1928-29, with a total capital outlay of Rs. 18·28 crores, for about 2,512 miles of lines. Of these nine were under Guarantee terms, two under Guarantee and Rebate terms, and the remaining nineteen under Rebate terms only. Of the branch line companies formed before 1910, only five were still surviving. The remainder were purchased by government at various dates.

The branch line policy has enabled lines to be constructed which would otherwise not have been built, and has thereby helped considerably to develop the country. But, as the Acworth Committee observed, it had no other advantage. "The Branch Line company is usually a fifth wheel to the coach."[3] It was expensive in every respect, implying a separate Board of Directors, separate accounts, and even in some cases, separate construction staff. The relation between the board of the branch line and the main line agency, as also between both and the Railway Board

[1] Resolution No. 969 R. P. Ry., dated 13th March 1914.

[2] Resolution No. 1894/86 P. Government of India, Railway Board, dated 7th January 1915.

[3] Acworth Committee Report, p. 57.

did not make for harmony. Moreover, each company, small or great, desired to reserve for itself a sphere of influence. This complicated the situation and public interest necessarily suffered in the matter of railway extension.[1] It was, therefore recommended that "the aim of government should be to reduce by amalgamation the number of existing companies,[2] and to abandon a policy which increases the number of possible claimants for the traffic of a given area. In cases, however, in which the state cannot or will not provide adequate funds, private enterprise in this direction should be encouraged.

The existing branch line companies had ceased for some time to raise additional capital. So far from reducing the amount that the Government of India had to raise in the open market, they were, through their loans from the Railway Board increasing the amount. Another serious disadvantage which was not mentioned by the Acworth Committee was that the main line usually worked the feeder or branch line for a remuneration which, in most cases, was limited to a maximum of a fixed percentage of the gross earnings of the branch line (usually 40 to 50 per cent). This remuneration had, after the War, proved inadequate, as the operating ratio of most lines had risen to 60 to 80 per cent. The employment of branch line companies had thus been extremely expensive.

In February 1925, the Government of India decided to abandon the Branch Line policy, and to endeavour to reduce the number of existing branch line companies.[3] With regard to District Board railways and lines in which some local bodies were interested, provision was made to reconcile

[1] Acworth Committee Report, p. 57, quotes instances in which some constructions were delayed for 10 years for this reason.

[2] *Ibid.* p. 58.

[3] Government of India, Railway Dept. Resolution, No. 2131-F, dated the 19th February 1925.

central and local interests, and a method of securing the construction of railways, for purely local reasons, on the guarantee of a minimum amount by the local bodies, was adopted with the approval of the local governments.[1]

III. Indian State Lines

The policy with regard to Indian state lines remains unaltered, but attempts have been made from time to time to reduce the number of agencies working railways in the same locality. This has been effected by either of the following methods: amalgamation of several working agencies under agreements, *e.g.*, Jodhpur-Bikaner Railway;[2] handing over working to adjoining main line agency (Baroda State, Mysore State, and Patiala State Railways), and giving a guaranteed company preferential right to make extensions in stated localities, *e.g.*, Nizam's Guaranteed State railway. In a few cases short sections of British Indian state lines are worked by the same working agency as the Indian State lines, in order to avoid multiplicity, *e.g.*, Bezwada extension line, Jodhpore-Hyderabad line, etc. In later years there has been an increased tendency for the Indian States to undertake the working of their lines themselves. The new policy of the Government of India will possibly stimulate this tendency.[3]

The Indian States rightly complain that in the provision of railways they have not received much encouragement from the Government of India, although they have always readily accepted its railway policy. They have supplied land free of cost for the construction of the lines but many of the laws of British India have been extended to these

[1] Government of India Railway Department Resolution No. 2131 F, dated 19th February, 1925, paras. 11-18.

[2] Contrary to this policy the Kathiawar states of Gondal and Porebunder had the management of their railways separated in 1912.

[3] The Nizam's Guaranteed State Railway Company's contract was terminated in April 1930, and the Nizam's State has taken over management.

strips of their territory depriving them of their legitimate customs income, and other rights. The vested interests and spheres of influence of lines in British territory often caused considerable delay and sometimes effected the stoppage of convenient railway extensions in the States. In the interest of the development of British Indian ports short approaches to the sea were denied, and preferential rates were allowed to operate to the detriment of traffic and economic development of the Indian States. Finally, in some instances the States were left with dead-end branches which they were made to construct on a promise that extensions in British territory would be made and through communication would be established. Such neglects have injuriously affected railway development in India.[1]

IV. Financial Arrangements

Mr. Thomas Robertson observed in his report that the arrangements made in 1900 by which proper equipment of old lines was given the first claim on the "programme," railways under construction coming next, and new projects last of all, would work well if there was money sufficient for all these purposes. The actual effect of the financial policy was, however, to restrict expenditure under all three heads. It was therefore recommended that capital expenditure on the improvement of old company-managed lines should be excluded from the "programme," and the companies should be permitted to raise money for such purposes independently. For new lines greater encouragement to private enterprise was suggested. As regards state lines the creation of a Railway Fund with about Rs. 15 crores to start with, was recommended, both for carrying on steadily any programme of improvement, or for undertaking new

[1] Memorandum on Indian States and Indian Railways presented before the Butler Committee, 1928-29.

construction. The surplus profits accruing to government should be credited to this fund, and the contribution to general revenues as well as to railway expenditure could be stabilised with the help of this reserved amount.[1]

Early in 1904 the Government of India, while rejecting these proposals, suggested a three-year's programme of construction and borrowing.[2] The Secretary of State provisionally agreed to grant a three years' supply to the proposed Railway Board. An annual expenditure of nearly Rs. 12 crores was then sanctioned.

In February 1905, Sir E. Law advised the government to dispose of its interest in the greater part of the railway property. The Government of India did not support the scheme but re-iterated the need for a bolder policy of state borrowing.[3]

The new Railway Board in the same year prepared its first triennial forecast for 1906-7 to 1908-9, providing for an average annual expenditure of Rs. 15 crores. The increase was advocated on the strength of a substantial rise in the surplus profits, and the need for additional rolling-stock, the demand for which was increasing fast. The Government of India was in entire agreement with the Railway Board.[4]

In 1907 the Secretary of State received deputations from Indian Railway companies and from East India merchants complaining about the inadequacy of railway arrangements in India. The Mackay Committee was thereupon appointed to investigate primarily into Indian Railway Finance and Administration. The Committee found that the equipments of Indian railways were unequal to the requirements of trade and increased allotments were called for. No definite

[1] Robertson's Report, 1903, pp. 53-54.

[2] India, Railway Letter No. 2, dated 7th January 1904.

[3] India, Financial Letter No. 62, dated 9th February 1905.

[4] India, Financial Letter No. 363, dated 2nd November 1905.

limit to the amount that might be remuneratively spent on the Indian railways could be assigned, and government was advised to fix periodically a standard of annual expenditure. The effective limit to annual allotments would be determined by the money available in England and India, which at that time was estimated at about £14 million, £9 million being raised in London annually. Leaving £1½ million for irrigation and other works, it was recommended that £12½ millions (Rs. 18·75 crores) per annum should be fixed for railway construction and development. Various methods of raising the money and of possible increase in the allotments were also suggested. The suggestion of Lord Rothschild that the Government of India should raise as much money as it could obtain during favourable times, irrespective of the annual programme, was advocated. Finally it was stated that the equipment and improvement of existing lines should take precedence of the construction of new lines.[1]

The Acworth Committee found in 1921 that in practice the Government of India could neither attain the standard of expenditure recommended by the Mackay Committee, nor could adhere, over a series of years, to any uniform rate.[2] Between 1908-9 and 1919-20 a maximum of Rs. 18 crores per year was reached only once, and the total amount spent was Rs. 134·5 crores, giving an annual average of Rs. 11·2 crores only. In 1916-17 the amount spent was brought down to Rs. 2·97 crores only. The failure of government was not confined to the period of War alone.

The railways in India, in 1920-21, were in a state of terrible under-feeding, with a considerable amount of leeway to make up. Numerous drawbacks and incapacity of the railways were complained of. These were primarily due

[1] Mackay Committee Report on Indian Railway Finance and Administration, pp. 11-12.

[2] See Appendix II, showing the growth of capital expenditure, 1900 to 1928-29.

to the failure of government to provide adequate funds for capital expenditure on development and extensions, and even for the essential operations of renewal and repairs. They were "the inevitable results of a paralysing system" which was not adapted and developed to meet the requirements of what was essentially a commercial service of the first magnitude. Drastic revision of the then financial methods was thereupon recommended, the basis of the reform being the complete separation of railway budget from the general budget of the country.[1]

The financial methods of the Government of India did not provide for commercial undertakings and therefore were unsuited to the railways. The control of the Finance Member, who is always constrained to economise could not make for any bold railway policy. The system of "allotments" which could suddenly be suspended or increased, together with the system of "lapse" at the end of a financial year, often led to extravagance, and never secured steady and economical working. The way in which each railway administration submitted its "programme" of both capital and "special" revenue expenditure, the various stages through which the estimates had to pass, and the manner in which the final grant was reached, not only caused a great deal of delay but sapped all initiative to careful estimate in the consideration of projects.[2]

The Mackay Committee accepted the system of lapse as unavoidable and quite consistent with the principle that the government should provide and distribute its money, each year, in the manner most advantageous to the country as a whole. The Acworth Committee entirely disagreed with this view, and considered that their predecessors confused the ordinary functions of government with those required

Acworth Committee Report, Ch. III, pp. 20-35.
Ibid, pp. 24-25.

of the owner of a great commercial undertaking. The financial arrangement best adapted to the needs of a commercial enterprise of such magnitude "could not be fitted into the rigid framework of the existing financial system of the Government of India." The Indian railways could not be modernised, improved, and enlarged, nor could they be made fully serviceable to the country and reasonably profitable to the public until the whole financial methods were radically reformed. The essence of the reform was laid down as "the complete separation of the railway budget from the general budget of the country, and its reconstruction in a form which frees a great commercial business from the trammels of a system which assumes that the concern goes out of business on each 31st March and commences *de novo* on the 1st of April; and the emancipation of the railway management from the control of the Finance Department." [1]

Railway investment in India was directly profitable and the indirect profits to the government and the country were inestimable. The failure of government to realise this at an early date and the consequent hesitation to supply more funds even to keep abreast of the day-to-day requirements of traffic, has greatly retarded the economic development of the country.

The inadequacy of maintenance and renewals was deplorable. In the absence of a proper commercial accounting method no provision had been made for depreciation, and government had formed no replacement reserve. The great War accentuated the evils to such a degree that it had become physically impossible to rehabilitate the railways within a short period without entailing too heavy a burden on current revenues of the government. India hardly produced any of her railway supplies. At an early stage of

[1] Acworth Committee Report, p. 26.

the War it became difficult to obtain the customary requirements from Europe, and later on it became impossible. A false economy was over and above enforced to keep down all expenditure, including that for maintenance and repairs, and instead of carrying the money so underspent to a reserve for future renewals, it was treated as part of the increased revenues to the state from the railways. Thus the net profits to the state were raised from 4·5 per cent in 1914 to a little more than 7 per cent in 1918-19, while the maintenance of the property was sadly neglected. The financial system which produced such results stood self-condemned.[1]

Immediately after the publication of the Acworth Report the Government of India appointed the Railway Finance Committee, from out of the members of the Indian Legislative Assembly, to advise on the two most urgent questions, the separation of railway finance, and the capital expenditure during the following years.[2] In March 1922, the Assembly voted a sum of Rs. 150 crores to be spent during the next five years on the rehabilitation of the existing railways and on the completion of lines already begun. Another recommendation of the Railway Finance Committee that there should be no lapse of money left unspent during any one year out of the five-yearly period was also agreed to.[3] The question of separation was postponed at the time.

The Indian members of the legislative assembly were anxious to tie government down to the policy of state management, and were naturally jealous of their control over the railways through the budget. The full scheme of separation with its influence on the general finances had to

[1] Acworth Committee Report, p. 31.

[2] Hon'ble C. A. Innes's Resolution in Legislative Assembly, dated 30th September 1921.

[3] Legislative Assembly Proceedings, 1922, Vol. II, Part III, p. 3750.

be worked out and the difference between the government and the members of the legislature had again and again to be referred to the Secretary of State. This caused considerable delay.

In the meantime the Inchcape Committee on retrenchment of expenditure of the Government of India urged, in 1922-23, the immediate appointment of a financial adviser on the Railway Board, to ensure that financial considerations were given their due weight before expenditure was incurred. Another recommendation of the Acworth Committee requiring proper provision for maintenance and repairs and the abolition of the then system of programme revenue expenditure was also re-affirmed.[1] This needed the creation of a Depreciation Fund, along with a Reserve Fund, to ensure the payment to general revenues. A Financial Commissioner was appointed in April 1923, as an additional Member of the Railway Board.

The separation of railway finance was not a new question. Major Conway-Gordon proposed it to the Select Committee of 1884. Several members of the Viceroy's Council had from time to time drawn attention to it. It was discussed during 1899-1901 when the Secretary of State gave his opinion that so long as the railways depended for money on the state they must share the vicissitudes of the public finances.[2] In 1906 the Commerce Member of the Viceroy's Council raised the question again, but the Mackay Committee gave their opinion against it. In other countries having state-owned railways, *e.g.*, Prussia, Switzerland, Belgium, Italy, France, South Africa, and Japan, wherever separation has been effected, the beneficial effects have been remarkable.[3]

[1] Retrenchment Committee Report, 1922-23, pp. 62-72 and 79.

[2] Colonel Gardiner's Minute of 16th October 1899, with notes from Sir A. C. Trevor and Lord Curzon, March 1900, and Secretary of State's reply, dated 4th January 1901.

[3] Acworth Committee Report, 1921, pp. 33-35.

In September 1924, the final scheme for separation of railway finance in India was placed before the Legislative Assembly. The evils of the existing system were once more explained, and it was proposed :

(*i*) to abolish the system of programme revenue voted for a year;

(*ii*) to establish a scientific Depreciation Fund;

(*iii*) to build up a Railway Reserve Fund with a view to equalise dividend to the state, to provide for arrears of maintenance, and to write down and write off capital;

(*iv*) to separate railway finance so as to suit the needs of a commercial undertaking, while ensuring a fixed contribution to government and proper control by the legislature ; and

(*v*) to establish a principle in the financial arrangements, so that the government might not indulge in a concealed way, in raising a tax on transportation by claiming further than their legitimate and stable return from railway investments.[1]

The Indian members of the legislature agreed to the principle of separation, but were anxious to see that the control of the Assembly over railway expenditure and policy might not be undermined. The amount and form of the contribution to be paid by the railways to general revenues were also matters of contention. Moreover, the legislature insisted upon the adherence to the policy of state management, a more rapid Indianisation of the railway services,

[1] Speech of Sir Charles Innes during debate on separation of Railway Finance in the Legislative Assembly, on 20th September 1924.

and the purchase of railway stores in India.[1] Finally a compromise was reached and the resolution on separation of railway finance was passed on 20th September 1924.[2]

The first clause of the resolution provided for the much-desired separation. The contribution to general finance was to be fixed according to a convention explained in the second clause. Clauses three to five referred to the creation of the Railway Reserve Fund. The sixth clause explained the constitution of a Standing Finance Committee and a Central Railway Advisory Council from amongst the members of the legislature. The procedure to be adopted in the presentation of the separate railway budget to the Assembly was laid down in the seventh clause, and in the eighth, provision was made for periodic revision of the scheme. The ninth clause re-affirmed the opinion of the Assembly in favour of state-management and gave the House the liberty to terminate the arrangements in the resolution, in case the government deviated from that policy against the advice of the legislature. Apart from the above convention but in connection with it, the Assembly recommended a more rapid Indianisation of the railway services including the Railway Board, and the purchase of railway stores in India.

V. Management and Control.

The control exercised by the Secretary of State for India, directly for state-managed lines, and through the Government Director of railway companies for company-managed railways, continued unaltered. As a result, however, of representations from the government of India and of the recommendations both of the Mackay Committee (1908) and the Acworth Committee (1921) the Secretary of State

[1] Amendments to the Resolution on separation moved by Sir Purshottamdas Thakurdas, and Mr. K. C. Neogy, Assembly Proceedings, 20th September 1924.

[2] The Resolution on separation of Railway Finance passed finally on 20th September 1924 is given in Appendix I.

has, in recent years, ceased to exercise that detailed check which was the cause of considerable delay and consequent inefficiency in the past.[1]

So far as the controlling authority in India was concerned Mr. Thomas Robertson (1903) recommended that it should be composed of a small Board of three Commissioners with thorough practical knowledge of railway working. The President or the Chief Commissioner was to be a member of the Viceroy's Council for railway matters.[2]

Early in 1905 effect was given to this recommendation. The Railway branch of the Public Works department of the Government of India was abolished and the control of the railway was transferred to a Railway Board consisting of a chairman and two members.[3] The Chairman was vested with the general control of all matters referred to the Railway Board, with power to act on his own responsibility subject to confirmation by the Board. The Chairman or a member was also granted power to settle questions which might arise on any tour of inspection, the decisions being recorded subsequently as those of the Railway Board. The Board was made subordinate and directly responsible to the department of Commerce and Industry of the Government of India. The Board assumed office in March 1905, and in the same month the Indian Railway Board Act was passed investing the Board with all powers of supervision and control of government under the Indian Railways Act of 1890.

Mr. Thomas Robertson further desired that extended powers should be delegated to the Boards of Directors of companies and by them in turn to the agents. The abolition of the Consulting engineers and the appointment in

[1] Acworth Committee Report, p. 40.

[2] Adapted from the Annual Administration Report, 1924-25, Appendix B.

[3] Resolution of Government of India dated 18th February 1905.

their place of government Inspectors were also suggested. These were given effect to in a modified form in 1908.

The Railway Finance Committee of 1908 (Mackay) pointed out that the work of the Railway Board was hampered by having the Commerce and Industry department interposed between it and the Government of India. Attention was also drawn to other defects in the method of administration.[1] The following changes were thereupon introduced, in October 1908.

The Chairman of the Railway Board was to be called the President and his powers were enhanced. The Board with its staff became collectively the Railway Department, independent of the department of Commerce and Industry, though remaining under the charge of the Member of the Viceroy's Council for that department. The President of the Railway Board was given direct access to the Viceroy, as if he were a Secretary to the Government of India. The Accountant-General, Public Works Department, was no longer required, and an Accountant-General, Railways, was appointed.

In 1909 the post of Director of Railway Construction was abolished and the appointment of Chief Engineer with the Railway Board was created for the purpose of advising the Board on technical matters.

In January 1914, it was felt, that in order to give adequate attention to commercial and financial considerations, the Railway Board should include one Member with experience in these matters. The former practice of selecting members of the Railway Board from men of large railway experience only was therefore modified. This arrangement, however, was altered in 1920 and again the former practice was reverted to. The post of Financial Adviser to the Railway Board was then created.

[1] Mackay Committee Report, pp. 23-26.

During the War certain necessary modifications had to be made in the central controlling machinery to cope with the increased government traffic, both civil and military. In September 1916, a war branch of the Railway Board's office was formed, but in the following March it was absorbed into the Indian Munitions Board and the Adjutant-General's branch. In 1917, a Controller of Traffic was appointed to take such steps, on behalf of government, as were found necessary for the most economical use of the limited transport available, and to control traffic in the best interests of national and general purposes. In July 1918, a Special Member of the Railway Board was added for the war period, and an elaborate system, for the control of traffic, through the issue of "Priority Certificates" by responsible officers of government, was instituted, to meet the abnormal situation.[1] This control was gradually relaxed, and in September 1919, the Controller of Traffic terminated his work and the Priority Certificate system was abolished.

The problem of supply of wagons to the collieries had become so acute that a special coal indent system had to be introduced in January 1917. In November that year a Coal Controller was appointed to work out the system. In April 1919, the post of Coal Controller was abolished, but a Coal Transportation Officer continued to work with the Railway Board till 1921.

The Acworth Committee thoroughly re-examined the working of the Railway Board in 1921, and found most of the evils complained of by the Mackay Committee to still continue. There was constant interference, by the Government of India as well as by the Secretary of State, in the details of railway management, and the Railway Board had frequently to apply to these authorities over matters of trifling importance.[2] Moreover, there was shown

[1] Railway Administration Report, 1918-19, Vol. L, Ch. III.

[2] Acworth Committee Report, p. 40.

a complete inability of the Railway Board to shape the financial policy of the railways. The following recommendations were made :

(*i*) That a new Department of Communications responsible for railways, ports, and inland navigation, road transport and telegraphs, under a Member of Council in charge of Communications, should be created:

(*ii*) that under this Member should be the Railway Commision with one responsible Chief Commissioner, assisted by one Financial Commissioner, who should be second in command, and three other Commissioners in charge of Eastern, Western, and Southern territorial divisions;

(*iii*) that the technical staff attached to the Commission should be strengthened, specially on the traffic side.

The Government of India did not accept the first recommendation, and could not agree to the change of name of the Railway Board.[1] It set itself, however, to re-organise the Board along the principal lines proposed by the Acworth Committee. In November 1922, the Chief Commissioner for Railways was appointed in place of the President of the Railway Board. He was made solely responsible, under the Government of India, for arriving at decisions on technical questions and for advising the government on matters of railway policy. He was no longer liable, as the former President, to be overruled by his colleagues on the Railway Board.

On the recommendation of the Chief Commissioner, strongly endorsed by the Retrenchment Committee (1922-23), the appointment of Financial Commissioner on the Railway Board was made in April 1923. The further proposals of

[1] The name "Railway Commission" was objected to because of a likely confusion with the judicial Commission that could be set up under the Indian Railways Act, 1890.

the Chief Commissioner for the re-organisation of the Railway Board were accepted and gradually brought into effect by April 1924. The strengthening of the technical staff began with the appointment, in November 1922, of a Chief Mechanical Engineer.

The re-organisation thus brought about led to the present constitution of the central controlling authority in India. The Railway Board thereafter consisted up to 1928-29 of the Chief Commissioner as President, the Financial Commissioner, and two members, the Chief Commissioner being Secretary to the Government of India in the Railway Department.[1] The proposals of the Acworth Committee for territorial division of work among three members of the Board was not accepted, and the work of the members is divided on the basis of subjects. One member deals with technical subjects, and the other with general administration, personal and traffic matters, the Financial Commissioner dealing with all financial questions.[2]

One of the principal objects of the re-organisation was to relieve the members of the Board from all but important work, so as to enable them to devote their attention to larger questions of railway policy, and to keep in touch with local governments, railway administrations, and public bodies, by touring to a greater extent than they had been able to do. This object was effected by placing a responsible Director at the head of each of the main branches of the Board's work, namely, Civil Engineering, Mechanical Engineering, Traffic, and Establishment. Deputy-Directors and Assistant Directors were also appointed as found necessary. A considerable devolution of powers has also been effected with a view to save unnecessary references from the Agents or

[1] In April 1929 an additional Member of the Railway Board, specially to look after staff and labour problems, has been appointed.

[2] Establishments have been entrusted to the new Member appointed in April 1929.

managers of individual railways to the Railway Board, and from it in turn to the Government of India and thence to the Secretary of State.

It must be noted in this connection that with the constitutional change effected through the Government of India Act of 1920, the position of the Railway Department was largely altered. The Legislative Assembly, three quarters of which are elected by popular vote, has thereafter large control, both of legislation and administration, and in particular has the control of expenditure, through its vote on the budget. The Governor-General, and through him the Secretary of State, have reserve power to veto the opinion of the legislature, and this power has often been exercised, but the constitutional change modified greatly the responsibility of the Secretary of State for the management of Indian Railways. An immediate result was the very large interest shown by the Legislative Assembly on railway matters.[1]

To meet the new constitutional position the Government of India followed the advice of the Acworth Committee with regard to the policy about the central controlling agency.[2] The Railway Board has been made an independent administration, though remaining an integral part of the government machine, and subject to control on broad questions of policy and the major questions of finance on which policy must depend. It prepares its own programme of work and expenditure, and, within the limits of its budget, as approved by the Government of India and the Secretary of State, and accepted by the Legislative Assembly, carries it into effect.

VI. Problem of the Gauge.

It has been noticed in chapter six that by the beginning of the present century four different gauges had come to stay in

[1] In 1924-25 29% of the questions asked in the Assembly were on railway matters.

[2] Acworth Committee Report, p. 44, para. 127.

the field of Indian railways. On the 31st March 1929, the route mileage opened on these different gauges were as follows :—

5′-6″ gauge	20,070 miles.
3′-3″ ,,	16,883 ,,
2′-6″ and 2′ ,,	3,997 ,,
Total	40,950 ,,

In 1903 Mr. Thomas Robertson expressed his opinion that the adoption of the broad gauge was a great mistake. The metre gauge had become as much the standard gauge as the 5′-6″. It was shown, on a study of the loading gauge in proportion to rail gauge, that the railways in India on the 5′-6″ gauge were working about 22½ per cent under potential power, compared to European standard, while the metre gauge lines were actually doing better work so far as utilisation of power went.[1] It was therefore considered that the Indian broad gauge railway was not so good a servant of the country as the metre gauge. Uniformity of gauge was undoubtedly desirable as the break involved not only the expenses of transhipment but delay in transit, detention of rolling stock, and increased working expenses. But the question of effecting uniformity largely depended upon comparative financial considerations as between uniformity of gauge with larger capital outlay, and break of gauge with larger working charges. The adoption of a policy of slowly working up to an eventual conversion of all railways in India to the European and American standard of 4′-8½″ was thereupon recommended.

Uniformity, it was stated, would in any case be impossible without large expenses, and the process of conversion must be a very slow one. The longer the settlement of

[1] Robertson's Report, 1903, p. 103.

policy with regard to the attainment of uniformity was deferred the greater would be the difficulty and expense of introducing it. In the meantime the evils of break of gauge could be considerably minimised by allowing the metre-gauge railways access to all the important centres of trade and business.[1] A scheme for the linking up and extension of the metre gauge railways was therefore suggested.

In 1906 Sir F. Upcott raised a discussion on the problem in the Institution of Civil Engineers in London,[2] and the general opinion there was that as matters had got so far, a compromise, rather than a drastic remedy, was the preferable course. The difficulties involved appeared to be insuperable and the Government of India was not able to lay down any set principles for guidance. As a consequence its attitude towards the two important Indian gauges could not be consistent. Attempts have, however, been made to widen the loading gauge of the broad gauge railways so as to utilise the power fully.

The Acworth Committee drew attention to the gauge question and recommended a thorough investigation of the problem by a special Commission of two or three experts, who would face it with the broad point of view of the whole of India, and would examine it from the operating, engineering, and financial sides.[3] One of the members of the Committee, however, felt that the inconveniences of break of gauge in India were often exaggerated, inasmuch as all the presidency towns and big ports were connected with each other and with Delhi on the same broad gauge.[4]

In 1922 . Mr. F. G. Royal-Dawson urged that the Government of India should insist on the conversion of metre gauge single lines into broad gauge whenever traffic

[1] Robertson's Report, 1903, p. 105.

[2] Minutes of Proceedings, Inst. C. E., Vol. CLXIV, p. 196, etc.

[3] Acworth Committee Report, 1921, p. 58.

[4] Sir H. P. Burt's Note, Acworth Committee Report, p. 90.

exceeded the capacity of the line and the railway is faced with the problem of either doubling the track or of widening the gauge.[1] It was a " light-hearted heresy " to assert that the metre-gauge systems should be linked together and should have direct access to the ports. It would in no time lead to extravagance and wasteful competition between the two systems, and would multiply the evils due to break of gauge by increasing the points of transhipment.

Government policy with regard to the attainment of ultimate uniformity of gauge in India remains still undefined. The following outline indicates the general policy during recent years :[2]

Railways are of two classes : through communications and feeders. For the former the broad gauge has distinct advantage and continuity is of great importance. Hence when a new line is proposed, in territory not definitely in possession of the metre gauge, the burden of proof of advantage should be on the metre gauge. When the capacity of a single metre gauge line adjoining a broad gauge is exceeded, the presumption should be in favour of conversion, or of building an alternative broad gauge line, in preference to doubling. It is unnecessary to aim at connecting up the metre-gauge systems throughout India. In case of feeder lines, continuity of gauge is of less importance; but the introduction of the break is not a proper method of preventing competition with main lines. Local railways may be of narrow gauge or of the gauge of adjoining lines, depending on local circumstances. Lastly, there may be a system of " light railways " of the cheapest standard and gauge.

It should be noted here that with the development of road transport the gauge policy in India will require thorough

[1] Paper by F. G. Royal-Dawson read on 13th November, 1921. Proceedings, Inst. of C. E., Vol. CCXIII, Part I, 1921-22.

[2] Indian Railway Board Technical Paper No. 212, by Sir Robert Gillan and Sir Robert Gales, p. 29.

modification, for many of the narrow-gauge lines may be rendered unnecessary as road motors are increasingly put into use.

VII. Rates and Fares.[1]

Mr. Thomas Robertson noted in his Report in 1903 that the money payment in India for railway transport was much lower than in England. But if we took into consideration the circumstances of the two countries, the rates for merchandise in India should be reduced by 30 to 60 per cent and for passengers by 18 to 40 per cent, before the Indian charges could be regarded as equal to those in England.[2] This large reduction was, in his opinion, not impossible of attainment, for in spite of the higher cost of operation, the average rate of merchandise in America was under 4·344 pies per ton per mile, while maize was at places carried with profit for less than two pies, the Indian average for merchandise being 6·72 pies. Considering the long distances, the rates in India were too high for the development of traffic, especially those on coal. The introduction of tapering rates with sufficient reductions for long distance traffic, and the application of the telescopic scale on the through distance and not merely on the local distance of each individual railway, were thereupon recommended.

Mr. Priestley was also impressed with the possibility of reducing Indian railway rates. He agreed with Mr. Thomas Robertson that the success of the American railways was largely due to their low rates which had developed the country enormously. He argued that if low charges were found necessary to develop business in America, their need in India was greater still, for the margin as well as "the whole sum available for expenditure by the multitude was so small."[3]

[1] Mehta, Indian Railways, Rates and Regulations, Chs. IV and V; S. C. Ghosh, Monograph on Indian Railway Rates.

[2] Robertson's Report (1903), pp. 68-69.

[3] Priestley, Organization and Working of Railways in America, 1903.

But the strongest influence that brought about large reductions in the rates for long-distance traffic between 1903 and 1915 was the continual increase of competition amongst the railways, and also between them and the steamers, inland and coastal.

The period of rate-cutting and competition leading to adjustments, agreements, and combination, continued roughly till 1916, by which date the effects of combination were visible in a general acquiescence in enhancement of charges, particularly on competitive traffic. The final cessation of unprofitable competition was facilitated by the War. Prices and wages rose in India in sympathy with changes all the world over and this rise caused increased operating expenditure. At the same time the prolonged competition and under-cutting amongst the railways made them realise the folly of a rate war. Numerous agreements for routing and division of traffic and reservation of respective spheres of influence were thereupon worked out.[1]

Between 1902 and 1907 the charges on Indian railways generally were reduced. It was certainly not possible to bring about such big reductions as Mr. Thomas Robertson contemplated. But in coal the rate for long-distance conveyance was brought down by 40 to 50 per cent. The modification of through rates and the introduction of the telescopic scale also received attention, but except in the case of a few commodities the railways could not agree.

The need for checking reductions, and in fact, for raising the rates, was, however, soon felt, and from 1909 attempts were made to bring about some general agreement amongst the railways in the matter. In October 1916 a general enhancement of rates was effected, with the concurrence of the Railway Board.

One of the effects of the War on Indian railways was the large increase of traffic, both freight and passenger.

[1] Ghosh, Monograph on Railway Rates, pp. 142-200.

The resources of the railways became heavily taxed. In September 1916 the rate for coal traffic to Bombay was raised. The suspension of repairs and renewals, difficulties of obtaining materials from Europe, and the decrease in the staff and the rolling stock, at a time when traffic increased, led to serious deterioration of railway service. To ease the situation mixed and passenger train mileage was reduced by nearly 22 per cent in 1916-17. This necessitated the adoption of measures to discourage traffic. In 1917 the maxima for passenger fares were raised and actual fares were increased. All fare concessions were withdrawn and steps were taken to warn pilgrims and intending passengers of the incapacity of the railways to cope with abnormal traffic.

As regards freight traffic a surcharge of one pie per maund for coal and two pies for other goods was imposed from April 1917.[1] This was a war measure designed to assist the finances of the state, and the proceeds were taken by government for general purposes.

At the same time, commercial bodies were consulted for the reduction of unnecessary traffic and the avoidance of cross traffic. A controller of traffic was appointed and a Central Priority Committee was formed to determine urgent, preferential, and ordinary traffic. Numerous traffic restrictions were also introduced.[2]

The attempts at simplification of traffic and unification of the rates policy continued throughout. In 1905, the Railway Conference Association appointed a Tariff Simplification Committee, which resolved itself into the Goods Classification Committee in 1910. In July 1910, the first "General Classification of Goods" was introduced, comprising commodities of both through and local traffic. Conditions of packing and carriage etc., were for the first

[1] The Freight (Railway and Steam Vessel) Tax Act No. XIII of 1917.

[2] Administration Report, 1917-18.

time taken into consideration in this classification. The sanction of the Railway Board was made necessary to any change in the classification, or to the classification of new articles, whereas previously, approval was not required for placing a commodity into a lower class. The traders complained that in the attempt at simplification many commodities that were quoted at lower rates under the former classification, had been raised to a level with others, the general result being a rise in the average rates throughout. The Railway Board thereupon withheld its sanction to the new classification, and refused to accept the maxima and minima proposed for each class by the Conference Association. Orders were issued to the effect that under any new classification no commodity should be charged at a rate higher than that permissible for that commodity on 30th June 1910.

By January 1915, the persistent efforts for uniform classification led to a reduction in the classification of more than 600 articles. Eventually, late in 1915, the Railway Board agreed to the classification, with slight modifications.

In addition to the surcharge of 1917, a primage charge of 30 pies per rupee of freight was imposed, from April 1921.[1] Grain and pulses were exempted and a free zone of 20 miles was allowed. The railway companies strongly protested against these undesirable taxes on transport. It was contended that the special levy, which was not allowed to be treated as railway revenue, not only left the railways without any margin to adjust their income to increasing costs, but was depriving the shareholders of a legitimate portion of the surplus earnings under the contract.[2] In some cases the existence of the surcharge threatened to exterminate the traffic. Moreover, these government levies

[1] Finance Act VI of 1921.

[2] Acworth Committee Report, Vol. I, para. 73.

were upsetting the operating ratio of the railways by keeping away from the railway accounts a portion of their gross earnings. As a result of these protests the Government of India decided to remove the special charges and to raise the maxima of the goods rates from April 1922. A new classification, splitting up the former five classes with the special X class into ten was agreed to. The increase in the maxima rates varied between 15 and 25 per cent, each of the first four classes being divided into two, the 5th and X classes becoming the 9th and 10th.

No change was made in the minima rates, and it is not clear why government did not think it desirable to raise them as well, in view of the increased operating costs. The present classification and rates, compared with the former, are given below :[1]

Goods Rates in pies per maund per mile

Before Revision of 1922			After Revision of 1922			
Class	Maxima	Minima	Class	Maxima	% of increase	Minima
1st	·333		1st	·38	15% over old 1st	·100
			2nd	·42	25% ,, ,, ,,	
2nd	·500	·100	3rd	·58	15% ,, ,, 2nd	
			4th	·62	25% ,, ,, ,,	
3rd	·666		5th	·77	15% ,, ,, 3rd	
			6th	·83	25% ,, ,, ,,	
4th	·833	·166	7th	·96	15% ,, ,, 4th	·166
			8th	1·04	25% ,, ,, ,,	
5th	1·000		9th	1·25	25% ,, ,, 5th	
X	1·500		10th	1·87	25% ,, ,, X	

These changes came into force in April 1922. At the same time the maxima for passenger fares were again

[1] From the Legislative Assembly Proceedings, 20th September 1921.

increased by 25 to 30 per cent. The advance in passenger fares between 1913-14 and 1923-24 is shown below :[1]

Fares in pies per mile per passenger

	1st Class	2nd Class	Inter Class	3rd Class
1913-14	14·48	6·60	3·14	2·29
1923-24	24·33	11·73	5·42	3·53
Percentage Increase	68	77	70	54

The Acworth Committee examined the relations between the railways and their customers and emphasized the need for greater government control over rates and fares, and for the appointment of a Rates Tribunal to examine various points of dispute for which a *prima facie* case had been made. The allegations of undue preference to foreign trade, and the neglect of local trade and industries were old. In 1912 Sir V. D. Thackersay brought forward a resolution on the subject in the Imperial Legislative Council, and many instances of the apparent neglect of indigenous industries such as matches, sugar, glass, etc., in the railway rates policy, were quoted. It was shown how the absence of through and tapering rates over two or more systems, and the deliberate use of the " block rates " that prevented traffic originating on one line from passing over to another after only a short lead, had injuriously affected trade and industries. The use of such " block rates " to kill the rising indigenous shipping industry in the City of Broach on the Bombay Baroda and Central India Railway was drawn attention to.[2] The Indian law on undue preference could not adequately check the growth of anomalous rates and the use

[1] From the Legislative Assembly Proceedings, 25th February 1925, Statement by Sir Charles Innes.

[2] The Broach case is the most notorious of the " block rates " impolicy. It lasted from 1910-1919, when under pressure of public opinion the block rates were withdrawn. Evidence was also received to show how an agreement between South Indian Railway and the B. I. Steam Navigation Company caused the port of Tirumalavasal to be almost closed. Acworth Committee Report, Vol. I, p. 51.

of "block rates."[1] Public opinion in India had been greatly agitated over the question. It was contended that the policy of the companies had been one of unmixed commercialism irrespective of the needs and aspirations of the country, while the railways should be made to work essentially for the service of the public. The strong feeling accumulated in India against company-management was due in no small measure to the rates policy pursued.

In 1915 the Railway Board had issued a circular asking the railways to keep in view the encouragement of indigenous industries, but such purely advisory instructions were not much heeded.

The Indian Industrial Commission of 1916-18 found that the rates policy was based entirely on the position created by the flow of traffic to and from the ports. Competition of rival routes, the influence of large shipping companies and coastal shipping, and competition with river routes had led to considerable modification of the railway rates to the ports. Many inequalities had arisen as a consequence, and generally speaking favourable rates for raw produce moving to the ports resulted. "The history of rate fixation reveals a desire to divert traffic from one Indian port to another, rather than a careful examination of the effect which the rates imposed would have on the total cost of conveying goods to their port of foreign destination, and therefore on their ability to compete with products from rival sources."[2] An incidental effect of the railway rate policy has been the congestion of industries in port towns. An examination of the question from a broad point of view, breaking up the unduly individualistic tendency of the different railway systems, was thereupon urged. These opinions were endorsed by the Acworth Committee (1921), and also by the Fiscal Commission (1922).

[1] Mehta, Indian Railways, rates and regulations, pp. 147-157.

[2] Report of the Indian Industrial Commission, 1916-18, p. 171.

During the last few years a distinct change in rates policy is noticeable. The East Indian Railway had recognised, at an early date, the ultimate commercial advantage to the railway from assisting local industries. But a general appreciation of this has been shown by most of the railways from 1922, when the new classification and scales were introduced. The removal of block rates has been facilitated by the territorial adjustments of the East Indian, Great Indian Peninsula, North Western, and Oudh and Rohilkhund lines after the assumption of state management for the first two in 1925.

The Acworth Committee was struck with the existence of a wide gulf in the country between the managers and users of the railways. The grievances of the traders as well as of the third class passengers had been many and old, and yet the Railway Commission under the Railway Act IX of 1890 was never appointed, mainly on account of the cumbersomeness of the procedure. Three things were therefore recommended, namely, (*a*) the appointment of a Rates Tribunal, (*b*) extensive revision of the Indian Railway Act of 1890, and (*c*) the institution of Central and Local Railway Advisory Councils. Attention was also drawn to the need for a revision of the risk notes and improvement in the settlement of claims. These were constant sources of dispute between the traders and the railways.[1]

The Central Advisory Council was formed in March 1922, and was reconstituted in 1924, when Local Advisory Councils were also established. The risk notes and conditions of conveyance were revised after considerable discussion in October 1924. A Rates Advisory Committee has been constituted in a modified form in April 1926. The revision of the railway law still continues to receive attention of the Government of India in 1929-30.

[1] Acworth Committee Report, Vol. I, pp. 47, 51 and 52.

CHAPTER VIII

ADMINISTRATION AND WORKING: 1903 TO 1924-25

I. *Progress of Work*

Between 1902 and 1924-25, 12,338 miles of lines were added, bringing up the total route mileage of Indian railways on the 31st March 1925, to 38,270 miles. The progress of new construction during the ten years before the War (1903 to 1913-14) was not unsatisfactory, being on an average 767 miles per year. With the outbreak of the War, new works other than those urgently required or for which materials had already been in hand, were suspended, and in 1917-18 some branch lines were actually dismantled, in order to supply railway materials to the eastern theatre of the War. Immediately after the War prices and wages had risen so high and the rehabilitation of the railways had become so urgent, that new constructions had necessarily to be postponed. Thus the average annual addition between 1913-14 and 1924-25 was only 328 miles. The highest net addition during a year was 1,172 miles in 1913-14, and the lowest was 47 miles in 1917-18, after allowing for some dismantlement. The following table shows the position of Indian railway net-work at the end of five-yearly periods from 1903 :

Route Mileage Open

Gauge	1903	1908	1913-14	1918-19	1924-25
Broad .	14,477	15,951	17,641	17,994	18,782
Metre ...	11,421	12,863	14,389	15,078	15,765
Narrow (2′6″-2′)	1,058	1,762	2,626	3,544	3,723
Total ...	26,956	30,576	34,656	36,616	38,270

Apart from the extension of old railways 89 new lines were constructed during the period as shown below :[1]

		No. of Lines	Miles
I.	State	23	2,035
II.	Companies subsidized by the State	2	117
III.	Indian States	19	1,010
IV.	Companies guaranteed or subsidized by Indian States	3	139
V.	Branch Line Companies under Guarantee terms ...	9	277
VI.	Branch Line Companies under Rebate terms ...	19	1,165
VII.	Branch Line Companies under Guarantee and Rebate terms	2	167
VIII.	District Board	5	140
IX.	Companies subsidized by District Boards ...	4	187
X.	Unassisted Companies	3	30
	Total ...	89	5,267

Thus the most important part played in the provision of railways during this period was that by the Government of India, the Indian States, and the Branch Line Companies under rebate terms.

The progress of new lines can best be seen from the following list of more important railways, that were opened between 1903 and 1924-25. These are arranged according to classification, gauge, and sequence of construction :

[1] Compiled from Administration Report, 1924-25, Vol. II, pp. 58-65.

Important lines (more than 50 miles) opened between 1903 and 1924

	Name.	Classification.	Gauge.	Year 1st Section opened.	Mileage open in 1924-25.
1.	Agra-Delhi Chord ...	State Line.	5'6"	1904	123
2.	Cawnpore-Banda ...	,,	,,	1913	76
3.	Burma Extensions ..	,,	Metre	1907	188
4.	Southern Shan State ..	,,	,,	1912	86
5.	Piyumana-Taungdwingyi ...	,,	,,	1922	67
6.	Moulmein-Ye ...	,,	,,	1923	70
7.	Kalka-Simla & Kohat Thal ...	,,	2'6	1903	112
8.	Satpura ...	,,	,,	1903	627
9.	Morappur-Hosur ...	,,	,,	1906	73
10.	Purulia-Ranchi ...	,,	,,	1907	115
11.	Trans-Indus ...	,,	,,	1913	162
12.	Ballarsha-Warrangal ...	Indian State Lines	5'6"	1924	58
13.	Travancore ...	,,	Metre	1904	96
14.	Jaipore ...	,,	,,	1905	179
15.	Morvi ...	,,	,,	1905	90
16.	Hingoli Branch ...	,,	,,	1912	50
17	Secunderabad-Gadwal ...	,,	,,	1916	108
18.	Kolar District ...	,,	2'6"	1913	64
19	Ludhiana Extension ..	Branch Line under Rebate.	5'6"	1905	153
20.	Amritsar Patti ..	,,	,,	1906	54
21.	Sutlej Valley ..	,,	,,	1910	127
22.	Jullunder-Doab ...	,,	,,	1912	133
23.	Sara-Serajgunj ...	,,	,,	1915	53
24.	Elichpore-Yeotmal ...	,,	2'6"	1913	118
25.	Jacobabad-Kashmor ...	,,	,,	1914	77
26.	Darjeeling Himalayan Extension	,,	2'0"	1914	95
27.	Chaparmuk-Silghat ...	Branch Line under Guarantee.	Metre	1920	51
28.	Bankura-Damodar ...	,,	2'6"	1916	60
29.	Mymensing Bhairabbazar ...	Branch Line under Guarantee and Rebate.	Metre	1917	101
30.	Jamnagar-Dwarka ...	,,	,,	1922	66
31.	Bezwada-Muslipatam ...	District Board Line	,,	1908	52
32.	Baraset-Basirhat ...	Subsidized Companies.	2'6"	1905	52
33.	Sahadhara-Saharanpore ...	,,	,,	1907	93
34.	Arra-Sasaram ...	,,	,,	1911	65

There arose in the period under review unprecedented multiplicity of railway systems, with the growth of a number of small working agencies. The different railway administrations in 1902 and in 1924-25 are compared below:

	State.	Indian States.	Companies.	Total.
1902 ...	3	4	25	32
1924-25 ...	5	15	36	56

The importance of these working agencies can be judged from the fact that in 1924-25 only 15 had gross earnings above Rs. 50 lakhs per year, 11 only had between Rs. 10 lakhs and Rs. 50 lakhs, whereas 30 lines brought in gross earnings less than Rs. 10 lakhs a year. The class I lines accounted for 34,425 miles, or nearly 90 per cent of the total mileage.

II. Internal administration

The internal organisation of Indian railways was, from the beginning, modelled on the English "Departmental" system. The Traffic Department was responsible for all operating and commercial work under a General Traffic Manager. Other important departments were Locomotive, Carriage and Wagons, Engineering, and Accounts and Audit. Control was entirely centralised and each department had its separate organisation on the line, such as District Traffic Superintendents, District Locomotive Superintendents, District Engineers, etc.

In 1904, the East Indian Railway separated the Operating Department from the Commercial for Traffic management. The three chief officers of the headquarters dealing with traffic thenceforward were Chief Superintendent of Transportation, Traffic Manager, Commercial, and Coal Manager. Two Divisional Superintendents, and a number of District Traffic Superintendents carried out the operating work under the Chief Superintendent of Transportation, and Assistant Traffic Managers and District Traffic Managers undertook the commercial work under the Commercial Traffic Manager. Local circumstances at Howrah, Cawnpore, Dhanbad, and Sahebgunje, however, had necessitated a modification in the separation of the two departments in those places. In 1909, a further reorganization of the Commercial Department of the East Indian Railway was made.[1] In 1914 a

[1] S. C. Ghosh, Organization of Railways, pp. 10 and 11.

similar re-organization of the Traffic Department of the North Western Railway, with the separation of the Operating and Commercial sections, was begun, and was completed after the War.

In 1922, it was realised that the Departmental system of administration, "the result of gradual development from primitive methods of railway operation, has become unsuited to the working of dense traffic over large areas," and the burden on headquarters staff, owing to the centralization inherent in this system, had become so heavy for some Indian railways that efficient control was impossible.[1] The Divisional organisation was therefore put to test, in a partial form, on the Great Indian Peninsula Railway, in November 1922, and following upon its success there it was introduced on the North Western Railway in October 1924, and on the East Indian and Oudh and Rohilkhund Railways in February 1925. The North-Western Railway was divided into seven divisions, the East Indian into four, and the Oudh and Rohilkhund into two only. The Bengal Nagpore Railway separated its Operating and Commercial Departments, in March 1924, as a first step towards reorganization.[2] Similar improvements in internal administration are in process of adoption on the other big railway systems. The smaller railways maintain their old departmental organization, with slight modifications. The state-managed railways have shown, during recent years, greater adaptability to these improvements than the company-managed lines.

An important administrative change was effected in 1908 when the Madras railway was purchased by the state, and the three big systems of railways in South India were amalgamated into two, the Madras and Southern Maharatta,

[1] Administration Report, 1923-24, Vol. I, pp. 11-12.
[2] Administration Report, 1924-25, pp. 5 and 6.

and the South Indian Railways. Similar amalgamation and re-arrangements were effected of many other small lines, after their purchase.

III. Financial Results

The total capital at charge on all railways, including those under construction, up to the end of March 1925, amounted to Rs. 740·7 crores, of which Rs. 655·2 crores represented the capital at charge on state-owned railways. The balance was money provided by Indian States, Companies, and District Boards. Of the amount of Rs. 655 crores on state-owned lines Rs. 608 crores was supplied by government, and Rs. 47 crores was the capital of managing companies.

In Appendix No. II are shown the capital outlay and earnings of all Indian railways from 1900 to 1928-29. There are obvious drawbacks in dealing with all-India figures, and the conditions of traffic and working are so different on various lines, that, strictly speaking, no generalisations can be made. On the whole, however, the railways ceased to be unremunerative from 1900. Between 1903 and 1924-25, the net earnings of the railways rose from Rs. 18·9 crores to Rs. 45·4 crores per year, there being only three periods when the earnings fell as compared with the previous year. In 1908 this fall was brought about by very bad trade conditions due to widespread failure of crops, combined with increased working expenses caused mainly through strikes and unrest amongst the staff in 1907-8; in 1914-15 the sudden dislocation of trade and the course of traffic due to the War caused a falling off in railway earnings; during 1919-20 to 1921-22, net earnings dropped because of the large increase in working costs, primarily for heavy revenue expenditure on deferred repairs and renewals, and the prevalence of high prices.

The percentage of net earnings to total capital outlay averaged 5·6% during the six years 1903-1908, 5·8% during the five pre-war years, 6·8% during 1914-15 to 1918-19, and 5·2% during 1919-20 to 1924-25. The apparently satisfactory results during the War years was due principally to a suspension of expenditure on renewals and repairs. The savings therefrom were reckoned as ordinary profits instead of putting them into a reserve for deferred renewals. The railway property was suffered to deteriorate, and the high dividends that were paid at the time were in fact done by mortgaging future earnings. The highest percentage of net earnings to total capital outlay obtained in the whole history of Indian railways was 8·09 per cent in 1918-19.

With the termination of the War a reaction set in, causing a sudden rise in the capital as well as in the working expenses, until net earnings fell to Rs. 22 crores, or 3·4% of the total capital outlay in 1921-22. This was the lowest percentage earned since 1873, and for a second time during the twentieth century the railways were a burden to the state. A general campaign of economy thereupon followed and the position improved, until in 1924-25 the percentage of net earnings to capital at charge came up to 6·2 per cent.

The Financial results to the state continued to be generally good, although losses of Rs. 2·3 crores and Rs. 9·3 crores were incurred during 1908 and 1921-22 respectively.

Appendix No. III shows from 1848 to 1928-29, the charges borne by or contributions made to the general revenues of the Government of India on account of the railways. The railway property brought in nearly Rs. 7 crores to the relief of the general tax-payer in 1924-25 in addition to contributing another Rs. 6·4 crores to the newly created Railway Reserve Fund. Whatever might have been the position during the first 50 years there was no

longer any ground for complaint about the financial burden of the railways on the Indian taxpayer.[1]

The net gains to the state from railways greatly fluctuated from year to year. This was principally due to the dependence of Indian railway receipts on harvest and trade results. The gross earnings of Indian railways vary widely from one year to another, and naturally, the working expenses cannot move to the same extent. The net receipts and with them the gains to the state, therefore are highly fluctuating. Before the separation of the railway budget in 1924-25 this re-acted on the capital expenditure on railways by the state, and the Finance Member had a very difficult task in making budget provisions.

An important factor that caused heavy fluctuations in the net income up to 1924-25, was the non-commercial system of accounting, under which repairs and renewals were made, not out of a Depreciation Fund, but out of ordinary revenues from year to year, as the necessity was felt. The enormous increase in railway profits to the state during the war years, amounting to Rs. 15·8 crores in 1918-19, the highest amount ever reached as yet, was due principally to the suspension of revenue expenditure on repairs and renewals. These expenses, it was argued, were rendered impossible on account of the stoppage of supply of materials from England, but it is deplorable that the money so unspent was not kept in reserve for future use.[2]

[1] Mr. C. P. Tiwari, in Ch. I, Sec. 7 of his "Indian Railways" makes elaborate calculations of actual loss to the state, and together with compound interest at 4 per cent on annual outstandings, computes the total loss as Rs. 300 crores up to 1919-20. He thereupon complains that the Indian Railways had been directly or indirectly responsible for a large increase in taxation. This is an extremely partial view of the situation. Even admitting his estimates and his theory of commercial accounting to be correct, one cannot ignore the huge indirect benefits to the country and large increase in the revenues of the state due to improved trade and economic conditions that followed the development of railways. These undoubtedly more than offset the loss of even Rs. 300 crores up to 1919-20.

[2] The Acworth Committee strongly commented upon this financial policy in heir Report, pp. 31 and 32.

During 1917-18 to 1921-22 the Government of India made a further large income out of the surcharge on freight traffic imposed in April 1917. In fact the railways served as the "milch-cow" of the state during the War years. The large increase in net gains to the state in 1924-25 was mainly due to a phenomenal increase in traffic earnings.

IV. Traffic Results

The following table shows the goods and coaching traffic results in different significant years between 1903 and 1924-25 :

Traffic Results, 1903 to 1924-25.

Year.	Mileage open 000s	Passenger Traffic.				Goods Traffic.				Percentage of earnings to total.	
		Number in millions.	Earnings in lakh Rupees.[1]	Av: rate charged per passenger per mile (in pies).	Average length of journey (miles.)	Tons millions.	Earnings in lakh Rs.	Av: rate per ton mile (in pies).	Average lead in miles.	Passengers.	Goods.
1903 ...	26·8	210	10,98	2·51	39·9	47·7	22,42	5·64	159·9	35·0	62·3
1908 ...	30·6	321	15,37	2·44	37·7	62·4	26,32	5·09	159·0	34·2	58·5
1909 ...	31·5	329	15,66	2·43	37·5	60·9	28,12	5·78	153·4	33·3	59·8
1913-14 ...	34·6	458	21,17	2·45	36·3	82·6	37,77	4·64	189·1	33·2	59·4
1914-15 ...	35·3	451	20,35	2·44	35·5	81·0	35,09	4·43	188·0	33·9	58·5
1918-19 ...	36·6	460	28,98	3·08	39·2	91·2	49,14	4·26	242·9	33·7	57·1
1920-21 ...	37·0	559	34,77	3·18	37·5	87·5	47,97	4·62	227·6	37·8	52·1
1924-25 ...	38·3	606	38,75	3·74	34·5[2]	106·6	65,45	6·00	273·4[2]	33·8	57·8

[1] Excludes Coaching earnings other than from passenger fares.

[2] 1924-25 figures are calculated on traffic originating only, while the previous years show average on all traffic. Calculated on the same basis as before the average distance a ton of goods carried in 1924-25 would be only 200·6 miles. The former method of calculation was objectionable, and the new basis is more scientific and useful for international comparisons. On the old basis the average lead of each railway was comparable to an All-India average. In the absence of tonnage originating figures before 1923-24 it is not possible to calculate the exact average lead in former years, on the new basis. The following figures, however, show the degree of vitiation approximately introduced:

	I. Av. lead, old basis.	II. Av. lead, new basis.	III. Percentage decrease of old figures compared to new.
1923-24 ...	192·8 ...	258·6 ...	25
1924-25 ...	200·6 ...	273·4 ...	26
1925-26 ...	187·5 ...	249·9 ...	25
1926-27 ...	180·4 ...	237·4 ...	24
1927-28 ...	185·2 ...	243·9 ...	27

The years in the above table have been carefully chosen to represent five-yearly periods before and during the War, as compared with two six-yearly periods from 1903 to 1909, and 1918-19 to 1924-25. The results of the two years 1908 and 1920-21 are worth special notice not merely because these are the fifth years from the beginning and the end of the period under review, but because in 1908 there was an exceptional depression in trade and traffic, and 1920-21 may be regarded as the last War year for railway purposes.

During the ten years before the War, passenger traffic steadily increased, in numbers as well as in earnings. In goods traffic, however, 1908, 1909, and 1913-14 showed abnormal features. In 1908 the tonnage increased but the earnings fell by nearly Rs. 3 crores, mainly because of the carriage of large quantities of grains at specially reduced famine rates. The sudden drop in the average rate per ton-mile was also caused by the same reason. In 1909 the quantity of freight traffic declined, due principally to a depression in the coal trade. An increase in earnings was, however, made as a result of the withdrawal of the reduced famine-rate for grains, together with heavier bookings of wheat, grains, oil-seeds, and raw cotton for exports.[1]

The year 1914-15 saw a fall in both the units and earnings of passenger as well as goods traffic, mainly due to the disorganisation of foreign trade, the absence of tourists, and the prevalence of famine conditions in certain parts. This disturbed state of foreign trade, due to the war, continued throughout up to 1920-21. But traffic on Indian railways soon overcame the first shock, and by 1915-16 the level of 1913-14 was reached. This was due to the larger carriage of military troops and stores, and to the fact that internal trade was not much affected. The " Rail and River Borne Trade of India " was 67·5 million tons in 1913-14,

[1] Administration Report, 1909, p. 5.

63·3 million in 1914-15, and again 67·5 million tons in 1916-17. This level was maintained till the last War year.

In 1917-18 the tonnage of goods and the number of passengers declined, as a result of deliberate checks to the growth of traffic adopted to meet the abnormal conditions. In the three previous years the railways had to cope with heavy military traffic, over and above the ordinary, while suffering from insufficiency of stock and equipment for want of fresh supplies. To make matters worse, the Indian railways had to supply from their depleted stock considerable quantities of locomotives, rolling stock, and permanent-way material to overseas railways for military purposes.[1] The incapacity of the railways to deal with the whole of the traffic offered, which was noticeable even before the War, became acute, but still the railway administrations were compelled, owing to depletion in their stock, to restrict train services. As a measure of war economy it was decided, in December 1916, to reduce passenger-train services, in the belief that less inconvenience would be caused by such curtailment than by interfering with the carriage of minerals and goods.[2] Increase of fares, suspension of fare concessions, levy of surcharges on freight, prohibition of pilgrim traffic, and the institution of a Central Priority Committee for the control of goods traffic movements, which were undertaken at the time, led to reduction of unnecessary traffic and the avoidance of cross traffic. The earnings in 1917-18 however did not decline owing first to the raising of passenger fares, and secondly to a considerable increase in the average haulage of goods from 230 miles in 1916-17 to 246 in 1917-18. This was partly due to the restrictions on short-distance traffic, but the main

[1] The following railway materials were sent out of India during the War: 774 miles of rails, new and second hand, 237 locomotives, and about 6,000 vehicles. Administration Report, Vol. I, 1920-21, p. 18.

[2] Railway Department Press Communique, dated 7th December 1916.

reason was the haulage of a considerable quantity of coal over long distances. A remarkable effect of the war on Indian freight traffic was the diversion of coal from the rail-*cum*-sea route *via* Calcutta to an all-rail route to the southern and western port towns. The acute congestion of the railways was much increased by this phenomenon.[1]

The years immediately following the armistice saw a very large increase in the number of passengers carried, amounting to nearly 100 millions in two years 1919-21. It was due to the effort of passenger traffic to attain its normal level as soon as restrictions in train services were withdrawn. From 1920-21 to 1924-25 the progress was comparatively slow, mainly due to enhancement of fares from April 1922.

Goods tonnage fell both in 1919-20 and 1920-21 owing to stoppage of military stores traffic and the falling off in coal, foodgrains, and sugar. A change in the character of traffic from the conveyance of large quantity of lower class commodities, like agricultural products and coal, to higher class imported goods, was brought about in 1920-21, and there was a serious decline in exports. This accounted for a slight increase in the earnings in 1920-21 and 1921-22 in spite of the fall in tonnage. From 1921-22 to 1924-25 the tonnage increased from 86·2 million, to 106·6 million, and there was a more progressive growth in goods traffic than before the War.[2] The earnings from freight increased by Rs. 17 crores in those three years, as an effect of the

[1] Acworth Committee Report, p. 19. Mr. S. C. Ghosh calculates that while on the rail-*cum*-sea route *via* Calcutta a coal wagon is turned over in 6 days it takes not less than 26 days on the all-rail route to Bombay. In fact the latter entails a positive loss on the railways at the usual rate charged. "Railway Problems," p. 153.

[2] The Annual Administration Report total on p. 13, Vol. II, 1924-25, is for tons originating only, and therefore the tonnage of all classes of railways, given separately, have to be added, to obtain the figures comparable with previous years. The same applies to the figure for total number of passengers.

enhancement of rates from April 1922. The earnings from passengers increased by Rs. 4·5 crores only, between 1921-22 and 1924-25. The large increase in goods traffic, during the last three years of the period under review, may be accounted for by improvement in agricultural conditions and increased volume of external and internal trade. Although the total foreign trade of India was still short of the pre-war level, by Rs. 40 crores in 1924-25, the increase effected from 1921-22 was nearly Rs. 80 crores. Thus, though the enhancement of rates affected internal movement, external transactions, particularly exports, were not much affected by it.

Comparing the general course of goods and passenger traffic during pre-war, war, and post-war periods it is noticed from the table given in page 272 that goods tonnage increased faster than passenger numbers during the war, the growth being nearly 10 per cent from 1913-14 to 1918-19, as against a nominal increase in passengers. From 1903 to 1913-14, however, passengers increased by 113 per cent as compared with about 73 per cent in goods tonnage. This change is explained by the fact that far heavier restrictions were placed on passenger movements during the war, than on goods. Apart from enhancement of fares at an early stage the reduction in passenger train-miles effected was from 56 million in 1913-14 to 44 million in 1918-19, while goods train-miles increased from 58 million to 74 million during the same period. In the addition of stock and purchase of stores also, greater attention was directed to the requirements of goods than to passenger traffic. The conclusion is that the railway authorities in India preferred to sacrifice passenger traffic, particularly the Mela and Pilgrim traffic, in favour of freight, during the war.

The post-war passenger traffic shows a growth of 32% from 1918-19 to 1924-25, while goods tonnage increased by nearly 17%. The average growth in number of passengers

between 1903 and 1913-14 was 24·8 million per year, whereas the post-war average per annum for six years was 24·3 million. The average growth per annum of goods tonnage during the same pre-war and post-war periods was 3·5 million and 2·5 million respectively.[1]

The average fare per passenger-mile varied in the neighbourhood of 2·45 pies before the war. It increased to 2·99 pies in 1917-18 and steadily went up during the following years till it reached 3·78 in 1922-23. In 1923-25 the average rate remained in the neighbourhood of 3·75 pies.

The other factor affecting earnings is the average distance travelled. There was a tendency towards a fall in this respect during the pre-war period, some rise during the war period, and again a rather distinct fall during the last three years of the period under review. On the whole, while in 1903 the average distance travelled was nearly 40 miles, in 1924-25 it was only 34·5.[2] This fall in the average length of journey was partly brought about by a large growth of suburban traffic during post-war years. Enhancement of fares and increased numbers accounted for increased earnings in spite of the fall. In the absence of figures showing the respective share of different classes of passenger traffic to the total the comparisons given above on averages may be misleading. In the following table is shown the position of each class of passenger traffic in 1913-14, 1918-19 and 1924-25. The 1924-25 figures are not quite comparable with those of previous years, because of the spreading over of seasons and vendors' tickets under different classes, and because they are based on passengers originating only.

1 These are calculated on the basis of total of all railways separately and not on traffic originating only as recorded from 1923-24.

2 The 1924-25 figure is based on passengers originating only, and as such is not comparable with previous years' figures. It is difficult to calculate the exact degree of vitiation, but on the whole it is clear that there was a large fall in the average distance travelled.

PASSENGER TRAFFIC BY CLASSES

	1913-14[1]	1918-19[1]	1924-25[2]
I. Number of Passengers: (in thousands)			
(*a*) First class	813	1,049	1,102
(*b*) Second class	3,461	5,119	9,781
(*c*) Inter class	12,371	8,722	12,213
(*d*) Third class	410,960	404,388	553,368
Total ...	457,718	459,732	576,464
II. Earnings: (in lakhs of Rupees)			
(*a*) First Class	69	1,12	1,23
(*b*) Second Class	89	1,73	1,92
(*c*) Inter Class	1,03	1,43	1,48
(*d*) Third Class	18,37	24,43	34,12
Total ...	21,17	28,98	38,75
III. Average rate charged: (per passenger-mile, in pies)			
(*a*) First Class	14·48	15·28	22·0
(*b*) Second Class	6·60	7·15	9·92
(*c*) Inter Class	3·14	4·17	4·95
(*d*) Third Class	2·29	2·86	3·47
Total ...	2·45	3·08	3·74
IV. Average miles carried: (per passenger)			
(*a*) First Class	112·5	133·8	97·5
(*b*) Second Class	74·6	90·6	38·0
(*c*) Inter Class	51·1	75·4	47·0
(*d*) Third Class	37·4	40·7	34·1
Total ...	36·3	39·2	34·5

As the basis of calculation in 1924-25 was quite different from those in the years previous to 1923-24, and as

[1] Season and vendors' tickets excluded from analysis but included in total.
[2] Season and vendors' tickets distributed according to classes.

comparable figures are not available, it would be idle to make any observations other than those of a general character. With the increase of fares in 1917 and 1922 it may be presumed that there was some transference of higher class passengers to lower classes, but except in the case of inter-class passengers in 1918-19, there is no clear evidence of such displacement. On the whole, third class passengers have always played the largest part in the total traffic on Indian railways, both in number as well as in earnings.

In earnings, the remarkable feature is the proportionately small increase for the second and inter classes. This can only be accounted for by the enormous increase in short-distance suburban traffic after the war. This has had important effect on the distribution of housing of the working population in the big cities like Bombay, Calcutta, and Madras. A new era in this respect had begun, and the need for electrifying the suburban lines in Bombay was forestalled.[1]

The rise in passenger fares affected all classes of passengers, as is evidenced from the average miles of journey and the average rate charged. It is remarkable how the average number of miles of journey fell during post-war years, particularly in the second and inter classes. The inability of the passenger traffic to bear the charges cannot be regarded as the principal reason for this drop, because all the classes were proportionately affected. Perhaps the main reason was the large growth of short-distance suburban traffic.

In goods traffic the average ton-mile rate was always above 4·5 pies in the pre-war period and always below this figure during the war period. This is not due to any material alteration in the rates but is accounted for by the

[1] The first electrified section was opened on the G.I.P. Ry. in February 1925.

increased conveyance of coal and government stores, which commanded low rates and thereby brought down the average. The lower average rate could not prejudicially affect the earnings because of the great increase in the average distance hauled.

It should be specially noted, that in India, the figures for goods traffic are highly fluctuating from year to year, on account of the varying nature of the traffic conveyed. The conveyance of a larger quantity of high class imported goods necessarily raises the average rate per ton-mile in a year, while there may be reduced tonnage, as well as the average distance hauled, without reducing earnings. On the other hand, a large increase in exports, following upon good agricultural conditions, tends to lower the average rate charged, as the grains and raw-materials exported command low rates. At the same time there may be a rise in the distance hauled, and the total earnings may not be reduced.

During the pre-war quinquennial period the average distance over which a ton of freight was carried was always less than 200 miles, while during the war period it was mostly above that figure, and in 1917-18 it amounted to as much as 246 miles. This abnormal rise was due to the transfer of coal traffic from the rail-*cum*-sea route to the all-rail route to the south and west of India.

In the post-war period the increase in goods earnings was due to increased average ton-mile rate, as well as a rise in the distance conveyed, compared with the pre-war period. The rise in the average ton-mile rate was due to enhancement of coal-rate in 1921-22, and general enhancement in April 1922, leading to an average of 6 pies per ton-mile during 1922-25.

The average distance over which a ton of goods was carried during the post-war period has been falling, on account of the diversion, once more, of a portion of coal

traffic to the rail-*cum*-sea route, as also to a general change in the character of traffic.[1]

Taking the whole period 1903 to 1924-25, the evidence that passenger traffic has not been of less importance than goods traffic, in spite of much discouragement, is one of great importance in determining the future policy of the railways towards the two. The proportion per cent of the earnings from passenger and goods traffic to the total are shown in the table at page 272. The following table shows the quantity and earnings of some important freight traffic in India :

Quantity and Earnings of some Important Freight Traffic on Indian Railways.

Articles (Total traffic on each Railway, and not originating only.)	1913-14		1918-19		1924-25.[2]	
	Million Tons.	Lakhs of Rs.	Million Tons.	Lakhs of Rs.	Million Tons.	Lakhs of Rs.
I. Coal and Coke ...	17·2	4,97	23·3	8,80	22·8	9,17
II. Grain and Pulses ...	12·6	8,15	16·4	12,12	14·6	14,49
III. Oil-Seeds ...	3·9	2,73	2·9	2,28	3·6	3,85
IV. Salt ...	2·2	1,29	2·6	1,79	2·5	2,22
V. Metallic Ores ...	1·8	69	1·1	45	2·6	1,12
VI. Raw Cotton ...	1·5	2,16	1·3	1,89	1·3	3,62
VII. Raw Jute ...	1·4	82	1·1	79	1·2	1,42
VIII. Gur, Molasses, etc....	1·2	78	1·3	90	1·1	1,16
IX. Iron and Steel (wrought) ...	1·0	1,06	·6	57	1·3	1,87
X. Kerosene ...	·9	74	·9	82	1·2	1,79
XI. Cotton, manufactured.	·7	1,32	2·0	3,21	·7	2,14
Total ...	44·4	24,71	53·5	33,62	52·9	42,85
Total Goods Traffic ...	82·6	37,77	91·2	49,14	106·6	66,45

[1] See Note 2 to Table on Traffic Results, p. 272. [2] Class I Railways only.

The following table gives an idea of the average earnings from, the average rate charged on, and the average haulage of different classes of traffic in 1924-25 :[1]

	Earnings in lakhs of rupees.	Av. rate (in pies) per ton mile.	Average haulage in miles.
I. General merchandise (including live-stock).	52,57	8·42	210
II. Coal and coke for public and Foreign Railways.	9,20	2·80	270
III. Coal and coke on revenue account and for construction.	2,09	2·15	242
IV. Other revenue stores (including materials for construction).	1,01	2·16	64
Total ...	64,87	5·91	206

V. Working Results

Appendix No. II gives the working expenses and the operating ratios of all Indian railways taken together, from 1900 to 1928-29. Prior to 1924-25 the working expenses always depended on the contingency of the amount of assets that was repaired or renewed during a year; and these again varied considerably from year to year, reflecting indirectly the state of general finances of government. Moreover, the total gross earnings were never very steady on account of their close dependence on agricultural and trade conditions. Any comparative study of the operating ratio or working expenses of Indian railways as measuring the efficiency of management was, therefore, somewhat misleading.

From 1903 to 1907 the operating ratio remained mostly below 50. In 1908 there was an abnormal rise to 60·2 as a consequence of a fall in gross earnings combined with a rise in working expenses, due mostly to heavy renewals of rolling stock and permanent way, repairs to bridges,

[1] Class I Railways only.

increased wages of staff, and rise in the price of fuel. From 1909 to 1913-14 the operating ratio steadily improved, until it came down to 48·9 in 1912. The following year it rose to 51·8, and the fall in gross earnings due to the first shock of the War raised the ratio to 54·2 in 1914-15.

During the War period the increase in working expenses did not keep pace with the increase in gross earnings, and the operating ratio declined, until it reached 45·7 in 1917-18, the lowest figure reached since 1877. The real cause of this was the suspension of expenditure on repairs and renewals. The capital assets were allowed progressively to deteriorate and the money left unspent swelled the railway surplus, while lower expenses were shown. In 1918-19, working expenses increased more than proportionately to the growth of earnings from traffic, and the operating ratio went up to 48·4%. This was due to larger programme of special repairs immediately after the close of the War, and also to higher scales of pay of subordinate and superior staff.

In the three years following, the demand for making good the neglect in repairs etc., during the War, caused a sharp increase in working expenses, and the operating ratio rose in 1921-22 to 76·2%, the highest ever reached. The troubles were accentuated by the rise in wages and in the price of materials. The fall in the operating ratio in 1922-23 was not due to any essential economy effected, but to the increased earnings brought about by higher rates and fares. The Inchcape Retrenchment Committee pointed out how, from 1913-14 to 1922-23, working expenses in all departments had enormously increased, and emphasized the need for economy in various directions.[1] The reduction

[1] Inchcape Committee Report, p. 64-72. The percentage increase in total working costs was 131% between 1913-14 and 1922-23, but in some departments on certain railways, the increase had been by 300%. Large reductions in Locomotive and Staff expenses were urged.

in expenses in the next two years was effected as a result of a general campaign for economy. In 1924-25 the operating ratio stood at 60·4, the improvement being helped by a greater proportionate growth in earnings. The adventitious gain derived by the state railways during the year, from a refund of customs duty, as also the savings in fuel, compensation charges etc., were balanced by the creation of the Depreciation Fund and a consequential rise in working expenses. After the separation of the Railway Budget and the creation of the Depreciation Fund the uncertain element of expenditure in any year on renewals has been removed, and the working expenses thereafter have been dependent only on the amount of traffic handled and the efforts at economy in working. The operating ratio now largely measures the efficiency of working.

The operating work done by the Indian railways, during important years in the period under review, is shown in the following table :—

Year	1909	1914-15	1918-19	1924-25
I. Mileage open (in thousands) ...	31·5	35·3	36·6	38·3
II. Coaching train-miles (in millions) ...	48·2	58·6	44·1	66·0
III. Goods train-miles (in millions) ...	44·1	56·4	74·3	60·0
IV. Mixed ,, ...	30·9	35·5	34·2	29·6
V. Total ,, including miscellaneous	128·3	157·1	158·6	163·6
VI. Passenger unit-miles (in millions) ...	12,365	16,023	18,040	19,910
VII. Freight ton-miles (in millions) ...	9,340	15,226	22,141	21,268

The total train-mileage increased steadily, fairly in proportion to mileage open, but the distribution of this total railway work between coaching and goods traffic underwent great changes. The heavy reduction in coaching train-miles while passenger-unit-miles increased, during the War period, accounts for the acute distress caused through over-crowding

of passenger trains, which drew many criticisms from the Legislative Assembly. On the other hand, the large figure for goods train-miles in 1918-19, as compared with 1924-25, indicates perhaps the running of goods trains with light loads in the former year, or measures the degrée of efficiency in train loading effected during the latter year. As all-India figures are not of much help in comparing operating efficiency the following table is compiled for some of the typical lines giving certain operating statistics for a pre-war year, and post-war year :—

SELECTED OPERATING STATISTICS.

	East Indian Rly. 5′6″			Great Indian Peninsula Rly. 5′6″			North Western Rly. 5′6″			Bengal & North Western Rly. 3′3⅜″			South Indian Rly. 3′3⅜″		
	1913-14	1918-19	1924-25	1913-14	1918-19	1924-25	1913-14	1918-19	1924-25	1913-14	1918-19	1924-25	1913-14	1918-19	1924-25
I. Density (*a*) Passenger mile per Route mile (in Thousands)	847	763	892	550	625	635	489	622	584	462	504	558	977	831	710
II. Density (*b*) Net-ton-mile per Route mile (in Thousands)	1,550	2,069	2,005	847	1,071	944	506	729	600	159	225	214	212	257	203
III. Average No. of vehicles in a Coaching Train ...	16·4	18	18·5	13·2	16·2	14·9	15·8	16	19·1	28·1	29·7	19·1	18·6	20·7	18·0
IV. Average gross weight of a Coaching Train (tons) [1] ...	347	388	395	295	365	349	298	341	394	222	237	266	202	234	204
V. Average No. of vehicles in a Goods Train [2] ...	37·3	41	49·2	27·3	27	39·7	32·7	32	54·6	30·3	34	42·6	23·2	27	41·9
VI. Average net freightweight of Goods Train (tons) ...	302	328	419	224	248	342	265	307	392	117	152	163	84	116	130
VII. Average gross weight of a Goods Train (tons) [1] ...	677	763	912	536	575	826	616	673	892	282	333	365	234	290	362
VIII. Average carrying capacity of Wagons (tons) ...	17	17·8	18·7	16·7	17·2	21	18·4	19·4	22	10·7	10·7	11·2	9·8	11·5	14
IX. Average Wagon-load (tons) Loaded Wagons only ...	12·9	13·7	14·5	11·2	13·8	13·6	11·3	15·1	12·1	5·6	6·7	6·7	5·2	6·0	5·3
X. Percentage of Engines waiting repairs to total ...	8·3	9·6	12·8	19·2	20·7	28·1	13·2	18·0	21·3	9·5	11·5	21·1	10·0	16·6	18·0
XI. Do. for Coaching vehicles	21·3	13·0	17·6	21·5	14·5	19·1	14·3	11·6	16·8	10·9	9·7	11·5	7·5	8·6	11·3
XII. Do. for Goods vehicles ...	3·0	3·5	4·7	7·2	4·4	6·4	3·5	4·0	8·1	4·8	5·9	4·5	2·4	4·2	11·5
XIII. Wagon-miles per Wagon-day	50	63	41·9	41	39	43·5	35	35	38·3	34	41	21·9	41	36	34·4

[1] Including weight of Engines. 1924-25 figures are for Passengers and proportion of mixed.

[2] 1924-25 figures are for Main lines only.

Taking the typical broad and metre gauge lines, it is observed, how, during the War, the density of goods traffic increased everywhere, while passenger traffic suffered varying changes. This is fairly in conformity with the number and tonnage and average miles of conveyance, during the three periods, as noted in a previous table, for all Indian railways.

The abnormal drop in the average number of vehicles in a coaching train on the Bengal and North Western Railway in 1924-25, while the average gross weight of the train increased, cannot be explained, except by suggesting a change in the method of calculation or some statistical error.[1] Generally speaking, the increased number of coaches per train in 1918-19 only indicates the strengthening effected at the time while passenger train services were reduced.

A notable feature in freight train operation in 1924-25 was the increase in train-load. The railway authorities in India are devoting great attention, of late years, towards improved train loads, and heavier engines are introduced. The average wagon load, however, is an important factor, and if it is neglected, the increased weight and number of vehicles per train will not, by themselves, effect most economical working.

A greater use of heavier wagons is reflected in an increased average capacity of wagons during post-war years.

The figures for percentage of stock awaiting repairs to total number show the waste of more than 20 per cent of power in some cases,—a deplorable consequence of the War. 1924-25 figures are generally worse than those for 1918-19, mainly because the evils resulting from the suspension of repairs, while there was intensive use of the

[1] It is significant that in 1922-23 the number of vehicles in a coaching train averaged 29·3 while the gross weight of the train was 237 tons. In the following year when revision of statistics was made these were 26·3 and 254 tons, in 1924-25 19 and 266 tons.

stock for which repairs were overdue, aggravated a few years after the armistice.

The wagon-miles per wagon-day figures in India are highly fluctuating from year to year, on account of the extremely variable nature of traffic. Generally, however, the Indian railway administrations may take pride in the fact that their wagon-miles per wagon-day records are by far the best in the world. The figures for 1918-19 record rather unusual circumstances of the intensive use of all wagons, as a result of increased traffic together with the conveyance of much long-distance freight. The wagon stock was increased gradually throughout the period under review, and the rate of addition was much raised during post-war years. In 1918-19 no less than 5,000 wagons were added, and the purchase of 3,000 wagons per annum for the following ten years by the state railways, was guaranteed. This increased stock, without corresponding improvements in the facilities to handle them, caused considerable loss of economy in working, and after a few years, when improvements were effected, the wagon supply was found to be so much in excess of requirements that some of the orders had to be cancelled. The reduction in wagon-miles per wagon-day in 1924-25 may partly be due to this excess in supply. The position became so bad in the years following that apart from sufficient reserves to meet demands in busy seasons, many wagons had to be kept lying idle, occupying a good deal of siding space and entailing serious losses.[1] The railway administrations were not quite blind to the impolicy of trying to meet the cry for shortage of wagon supply merely by increasing the stock, without adequate

[1] Evidence of Sir Clement Hindley before the Royal Commission on Agriculture, October 1926, and the reply of Mr. A. A. L. Parsons to Question No. 128, Delhi session of the Legislative Assembly, January to March 1927, show that about 30,000 wagons were in excess, mainly due to improved working. In letter No. 134-5, dated 21st Dec. 1927, to Secretary, Indian Merchants' Chamber, Bombay, the Railway Board fully explained the circumstances of surplus.

facilities for handling them. Unfortunately, however, they succumbed to public pressure in this respect.

The average speed of trains, taking all Indian railways together, in 1924-25, was as shown below :—

	Miles per hour	
	5′-6″ gauge	3′-3⅜″ gauge
Passenger trains ...	19·0	16·0
Mixed trains ...	13·0	12·0
Goods trains (Main lines) ...	9·23	9·17
,, ,, (Branch lines) ...	8·89	9·45

Taking a few typical lines the average speeds in 1924-25 were as follows :—

(Train miles per train engine hour.)

Main lines only.	Gauge.	Passenger.	Mixed.	Goods.
East Indian Railway ...	5′6″	21·7	15·9	9·0
G. I. P. Railway ...	,,	19·6	13·3	9·5
North Western Railway ...	,,	19·5	14·2	10·0
Bengal and North Western Railway ...	3′3⅜″	15·8	11·9	8·0
South Indian Railway ...	,,	16·6	13·1	9·6

A serious state of disrepair had greatly reduced the efficiency of the railways immediately after the War. The percentage of rolling stock under repair increased on most lines and the tracks deteriorated. The average speed of trains, both goods and passenger, had, therefore, fallen on many railways.[1] By 1924-25 this position was gradually improving.

VI. War and the Indian Railways

The financial effects of the War on Indian Railways, the congestion of traffic consequent on conveyance of military

[1] Administration Report, 1920-21, p. 17.

stores and troops, and the diversion of coasting trade, the changes in the central controlling authority, the increases in rates and fares, and the levy of surcharges on goods traffic, have been noted in Chapter VII and in the previous sections.

In addition to the provision of the usual transport facilities for war traffic, the railway administrations in India co-operated heartily in meeting heavy demands for staff and material for railways in East Africa, Mesopotamia, and elsewhere. A considerable number of officers and men volunteered for military duty, and the railways, in most cases, paid the allowances of the staff given up. A munitions branch of the Railway Board's office was constituted in July 1915, and the railway workshops, in co-operation with others in the country, undertook the manufacture of shell bodies and other war stores. In addition to the locomotives and vehicles, and quantities of nails and other materials supplied by the railways for the eastern theatre of war, a number of river crafts were sent away, resulting in the closing or curtailing of several ferry services and considerable diversion of traffic. A few hospital trains, both for British and Indian troops were also expeditiously constructed in the railway workshops, and added to the numerous kinds of transport and other accessories supplied. Much assistance was also given to the military authorities in the arrangements for the recruiting and training of permanent way maintenance gangs, assistant station-masters, railway telegraph signallers etc.

The lessons of the War on the administration and working of Indian railways have been many and varied. It prominently brought to view the extremely unsatisfactory system of financing the railways, and the non-commercial method of accounting. It emphasised the great need for extending traffic facilities in many directions. It expedited the policy of appointing Indians to superior services; and

lastly, it eminently strengthened the case for fostering indigenous railway industries.

VII. *Measures for Improvement and Economy*

In 1901 Mr. Thomas Robertson who was specially deputed to investigate the administration and working of Indian Railways discovered, among other things, the need for much reform in the operation of the railways.[1] A continuous effort to improve the working conditions and the efficiency of open lines had thereafter been made. The rate of progress, however, was not uniform, and during the War many salutary reforms had to be suspended for want of money and materials. Nor was there any degree of uniformity amongst the different railways in the provision for improvements. On the whole, the measures for improvement were :

(*a*) Improvement of permanent way including use of all-steel British standard rail, better sleepers and ballast, strengthening bridges, re-alignment and re-grading of lines, doubling and quadrupling of tracks, and increased station facilities ;

(*b*) Remodelling and enlarging yards and stations ;

(*c*) Standardisation and improvements of rolling stock, including the introduction of bogie vehicles, alarm chains, electric lights, lavatories, with good supply of water, heavy wagons, centre-buffer coupling, and vacuum brakes ;

(*d*) General revision of the loading dimensions with a view to maximise the service obtainable from the line gauge ;

(*e*) Interlocking of points and signals, increasing blocks and crossing points, use of up-to-date methods of signalling, and finally the introduction of the "train control" system ;

[1] Robertson's Report on Administration and Working of Indian Railways, Ch. III.

(*f*) Pooling of wagons;

(*g*) Economical use of fuel by fitting super-heaters to locomotives, introduction of oil-fuel on some railways, and watching the statistics of fuel consumption;

(*h*) Improved train, vehicle, and wagon load;

(*i*) Increased average speed of trains;

(*j*) Increased workshop facilities;

(*k*) Improved stores purchase and distributing system.

(*l*) Economy of staff, and Indianisation;

(*m*) Increased comforts for third class passengers and prevention of over-crowding; and

(*n*) Improvements in statistics and accounts.

The improvement of permanent way was begun on some lines, particularly on the East Indian Railway, long before the close of the nineteenth century; but a general movement in this direction was made only after the institution of the Railway Board. Technical Committees of the Railway Conference Association afforded great assistance in the scientific study and economical introduction of many modern engineering developments. The progress, however, has been very marked only after the publication of the Acworth Committee Report, which re-emphasised the necessity of increased line facilities, and rehabilitation of the permanent way. Two problems that engaged great attention of the Railway Board during later years, in this connection, were the supply of good sleepers, and the life and capacity of bridges.

The improvement in the capacity of open lines by remodelling and enlarging yards and stations, and by progressive signalling arrangements, was vigorously undertaken in 1912, following great congestion on the railways. It was realised that the full benefits of increased wagon supply could not be obtained without adequate facilities to move them freely, and consequently emphasis was laid, by most of the railway administrations, on the matter.

With the same end in view the "train-control" system of working traffic was introduced at overcrowded sections. It was first tried jointly by the North-Western and the East Indian Railways, for controlling the heavy traffic at Delhi on the occasion of the Durbar in 1911, and in 1913-14 the Great Indian Peninsula Railway introduced the system on certain busy lengths. Other lines followed the example, and although, during the War, progress was retarded, by 1924-25 most of the big main line railways had the "train-control" system of working adopted on numerous sections.

The improvement of rolling stock started with the periodical conferences of Locomotive and Carriage and Wagons Superintendents, which were arranged towards the later years of the 19th century. In 1902, the questions of standardization and increased dimensions were taken up, and these were re-examined in 1908, 1918-19, and again in 1922-23. The standardization of locomotives was decided upon in 1904, and the standards then determined were progressively modified and have been further revised for all rolling stock between 1922-23 and 1926-27. Various standardization Standing Committees have been appointed in 1927-28 to bring into effect scientific standardization while keeping an eye on the danger of stagnation.

Super-heaters were first fitted to locomotives in India in 1913-14, thereby effecting an economy of about 15% in the consumption of coal. The introduction of heavy engines including those of the articulated type, specially for the haulage of heavier mineral and goods trains was also begun at about the same time. In recent years (1927-28) remarkable progress has been made in this respect.

The type of passenger coaches became more or less standardized by 1913-14. The need for as large a space as possible in the compartment, combined with a greater desire for privacy than in other countries, rules out the

corridor system of construction in India, except for certain special services.[1] Moreover, the urgency of providing transport at as cheap a fare as possible, particularly for the third class, makes the allowance of corridor space uneconomical and undesirable. The recommendation of Mr. Thomas Robertson to have all passenger trains fitted with vacuum brake and chain alarm was carried into effect long before the War, and train-lighting by electricity was in fair progress. The use of the bogie type of coaches had also become extensive.

The third class passengers in India carry much luggage with them on long journeys, and for them long bogie coaches with a plentiful provision of racks for stowing away luggage are found suitable. Proper provision of lavatory and water-supply is of course essential. In 1915-16, trial was begun on the Great Indian Peninsula Railway with all-steel coaches. These cars offer certain advantages in their superior rigidity and immunity from fire and splintering in a collision, but the problem of keeping them cool by means of non-conducting layers has been difficult of solution. In recent years the Great Indian Peninsula and East Indian Railways have extensively adopted all-steel coaches for certain passenger services.

There was the same tendency towards increased dimensions and standardization of wagons. The type of steel-covered goods wagon in use on Indian railways has become regular, although there are difficulties in actually adopting a uniform design for all railways, owing to difference in class of traffic carried, and the standard of permanent way on various lines.

In February 1917, all broad gauge coal wagons were pooled, and following some enquiry by a Special Committee for general pooling, the whole goods stock on broad gauge railways was pooled in November 1919. Substantial

[1] Administration Report, 1913-14, pp. 20-21.

economy in the use and working of wagons has ensued thereafter, and standardization has become easier and more necessary. The absence of private-owned wagons in India has been in many respects a great boon to the railways.

In 1919-20, the Railway Board proposed the introduction of automatic centre-buffer coupling for the broad gauge stock, the metre gauge wagons having already been so designed with advantage. In the following years various methods were examined, in order to effect the conversion of old wagons most economically. Special type Hopper wagons of large capacity have been introduced since 1919-20, for handling heavy minerals. Insulated refrigerator cars are also in use from 1913-14 for carrying fruit and perishable traffic on some railways. The loading gauges have been modified from time to time, and increase in dimensions is even now proceeding (in 1928-29).

All these programmes of development and rehabilitation were, however, temporarily checked during the War, and from 1920-21 they have been pushed on with renewed vigour. The provision in 1922 of Rs. 150 crores of capital expenditure spread over five years, was not at all too soon, and extensive improvements have been generally effected since that date. Apart from rolling stock the main purposes for which the money was spent were additional facilities to handle coal and mineral traffic on the East Indian and Bengal Nagpore Railways, remodelling and extension of yards and stations, doubling and quadrupling of tracks, facilities for handling passenger traffic in congested areas, including large extension of passenger terminal arrangements at Bombay, Calcutta, Madras, Lucknow, Nagpore, Delhi, etc., electrification of suburban lines at Bombay, and special provisions for the comfort of third class passengers, including increased waiting and retiring accommodation, booking facilities, watering and lighting arrangements, and sanitary conveniences in refreshment rooms and cars.

Four things have agitated the Indian public very much in their relation to the railways, namely, the over-crowding and discomfort of third class passengers, the alleged neglect of encouragement to indigenous trade and industries, the purchase of railway stores abroad, and the delay in the Indianisation of services. The whole period under review was full of a ceaseless attack on the Railway Board and on the Indian railway administrations on these grounds. It is not possible in the small compass of this book to enter into the controversies raised and only a few historical notes are given.

VIII. Grievances of Third Class Passengers and Measures to remedy them.

In 1903 Mr. Thomas Robertson pointed out that " the railways in India were insufficiently appreciative of the value of third class passenger traffic," which was " the backbone of the passenger business of every railway."[1] The third class carriages were very much overcrowded, and the treatment to which third class passengers were subjected called for very special attention. Many valuable suggestions were thereupon made for improving the position.[2] The Government of India had already been alive to the matter and had urged upon the railway administrations, from time to time, the need for providing comforts for the third class passengers. In the absence of effective control by the government, however, no substantial improvement was brought about. The complaints of third class passengers referred to the following :—

(*a*) Overcrowding of carriages and insufficiency of trains.

Robertson's Report, pp. 60-61.
Robertson's Report, pp. 60-64.

(*b*) Use of cattle trucks and goods wagons for pilgrim passengers.

(*c*) Absence of latrines in the coaches, or their extremely unsuitable character where provided.

(*d*) Absence of arrangements for meals.

(*e*) Insufficient arrangements for the supply of drinking water.

(*f*) Absence of waiting halls, or their generally uncomfortable nature.

(*g*) Want of cleanliness of carriages, lavatories, and waiting halls.

(*h*) Inadequate booking facilities.

(*i*) Harassment at checking and examination of tickets.

(*j*) Want of courtesy and sympathetic treatment of the passengers by the railway staff ; and

(*k*) Bribery and exactions at stations, platforms, and in the train.

In 1905 the Railway Board asked the railway administrations to provide facilities for obtaining tickets long before the departure of trains, the examination of third class tickets both at terminal and roadside stations in order to properly direct the passengers, and for adequate seating accommodation in the carriages. In 1906 special action was taken for the provision of chain alarms on all passenger trains. Inspection of refreshment rooms and improvements therein were also undertaken. Refreshment cars with washing arrangements for the third class passengers were tried on the Madras and Southern Maharatta Railway, but with little success. In 1909, Passenger Superintendents were appointed on the North Western Railway, specially to look after the comfort of passengers, and some other state-managed lines followed the practice. Progress was also made in providing lavatories, upper berths, racks, and

electric lights for third class coaches, enlarged and more comfortable waiting sheds, and high instead of low level platforms. Mixed trains were replaced by pure passenger trains, and third class express trains were increased. Census of actual number of passengers in each train was taken periodically to watch and prevent overcrowding, and improved arrangements were made for handling special pilgrim or " mela " traffic.

During the War the sufferings of the third class passengers became acute. Mr. M. K. Gandhi stirred up the whole country, in 1917, with strong indignation at the hardships of these passengers, and the Indian Legislative Council from that year onward has become insistent for improving their lot.[1] The Railway Board issued orders and circulars, but it was generally argued on behalf of the railway administrations that the passenger traffic was extremely intermittent, and the discomfort felt was greatest only when there was exceptional rush on the railways on account of fairs or pilgrimage. No great relief to the conditions of overcrowding could be made without unnecessarily increasing the stock and the trains for normal times. Moreover, the habits of the people, their want of education, and social exclusiveness made adequate relief difficult.

Indian third class passengers travel mostly on business, in search of employment, for attending marriages or other social ceremonies and fairs or "melas," and on pilgrimages. They usually carry a lot of belongings, and often rush to travel on particular auspicious days. Consequently, the control and fair distribution of the passengers over the whole year are difficult. But when the overcrowding comes to a constant and daily affair, carried to a length that passengers travel by regular trains, perched in the luggage

[1] Mr. M. K. Gandhi's Letter to Railway Board, dated the 25th September 1917, and the Railway Board's reply to the charges by letter No. 552 T, dated the 22nd January 1918.

racks, and hanging outside or squatting on the steps of coaches, it is another matter. The Acworth Committee found in 1920-21 most of the evils complained of long ago still to continue, and urged that serious measures should be taken to deal with them. They were of opinion that "something more might be done by measures such as borrowing stock to the utmost possible extent from other lines to meet exceptional local pressure, and by strict supervision of such matters as enforcing cleanliness and the provision of drinking water."[1]

In the years that have followed the comfort of third class passengers has received a substantial degree of attention, and the Railway Board has not only prohibited the use of wagons and cattle trucks for the conveyance of pilgrims, but has also brought about the provision of more trains, better waiting sheds, water supply, booking facilities and cleanliness.[2] Attempts have been made to check the general incivility of the railway staff towards third class passengers, and a numher of passenger superintendents have been employed to look after their comfort.[3] In bringing about these improvements the extension of direct state-management and the insistence of the legislature, have had very important influence. The education of the people on the discipline of railway travel, through the publicity departments of the railways, should be undertaken, along with other measures, to improve conditions substantially.

[1] Acworth Committee Report, pp. 64-65.

[2] Every Divisional Superintendent of state-managed lines is now-a-days required to report what additional steps have been taken, every four weeks, to increase the comfort of third class passengers (1928-29).

[3] Passenger Superintendents have been usually recruited from amongst retired Indian junior army officers. Their military outlook and want of knowledge of local civil life and social conditions, and often of the local vernacular, have, however, been responsible for considerably reducing their efficiency.

IX. Neglect of Indigenous Industries, and the Policy of Stores Purchase

In 1903 Mr. Thomas Robertson said that sufficient attention was not given by the railways to the creation and development of local industries.[1] Complaints were made of undue preference to imported articles and to raw materials for export, and the want of encouragement of railway industries in the country. The question of undue preference has after prolonged agitation been under examination in an indirect way by the Railway Rates Advisory Council constituted in 1926. With regard to the second, the position of the Railways as the biggest consumer of many materials, particularly of iron and steel manufactures, had not been judiciously utilized in fostering railway industries in India, and in making the country self-supporting in its railway supplies. Apart from increasing the wealth and employment of labour, the ultimate benefits to the railways would be incalculable if railway materials were manufactured in the country. The uncertainty of foreign supply would be eliminated, working expenses and capital expenses might be reduced, a substantial economy in the stores balances would be effected, and there would, at the same time, be an increase in railway earnings consequent upon the general prosperity of the people.

In 1905, the Railway Board recommended the use of certain local manufactures, but up to the outbreak of the War the interest shown by the Government of India in the matter was lukewarm. A superintendent of local manufactures, with a laboratory and test house, was, however, appointed on behalf of state-worked railways. In 1915, the stoppage of supplies from England opened the eyes of

[1] Robertson's Report, 1903, p. 74, para. 203.

the Railway Board, who urged upon the railways the need for developing indigenous railway industries and purchase of stores in India. The Tata Iron and Steel works, which were opened a few years before that time saved the railways from complete starvation, and in 1920 a seven years' contract was entered into by government with the company for the supply of rails and fish-plates. The encouragement that was obtained by the firm at that time has enabled it to supply most of the permanent way requirements of Indian lines in recent years.[1] Railway workshops had also increased their activities, not only in repairs and assemblage work, but also in the construction of coaches and wagons. Private firms for the manufacture of rolling stock in India were established, and in 1918-19, the Government of India undertook to purchase locally 3,000 wagons annually for ten years, with a view to nurture the wagon-building industry.

The Indian Industrial Commission emphasized, in 1918, the failure of the then existing stores purchase rules to secure local purchase to an adequate extent. The creation of an organisation for the purchase and inspection of materials in India was recommended, and it was urged that all indents for government railway stores should be met, as far as possible, in the country.[2] In 1921, it was observed that India was yet altogether incapable of manufacturing engines. The capacity of existing private wagon-constructing shops was very limited, and even so the output was dependent on the supply of wheels, axles, brake gear etc., from abroad. Coaching stock was mostly erected in railway shops, but the supply of all the main parts and fittings were obtained from England. The uncertainty of English supplies and their constant failure from one cause or another, including

[1] In 1924-25 almost the entire demand of both state and company-managed railways was met by the output of the company. In 1927-28 a new contract has been entered into with the company for the supply of rails and fish-plates etc.

[2] Industrial Commission Report, 1916-18, Ch. XII, p. 126.

labour troubles and freight shortage immediately after the War (1919-1921), prevented the Indian railways from working even up to the programme of output for which funds were provided.[1] Considerable difficulty was also caused by an abnormal rise in prices in England and abroad. This state of affairs continued for some time.

The question of indigenous industries was discussed in the Indian Legislative Assembly in March 1922, and a Committee was appointed to examine their possibilities, and to find out how much of the Rs. 150 crores sanctioned for railway rehabilitation during the next five years could be spent in the country. In the meantime the Indian Fiscal Commission recommended that encouragement to Indian railway industries should be given, not by protective duties, but by bounties,[2] or by a definite government contract for a period of years on a sliding scale of prices. Accordingly, in 1924-25, the Steel Industry Protection Act was passed, section 4 of which authorized the grant of bounties for wagons built in India.

The rules for the purchase of stores were, moreover, examined by the Stores Purchase Committee of 1920, and were revised in May 1924.[3] Greater provision was made for purchases in India, so far as was consistent with efficiency and economy. An Indian Stores Purchase Department was established in 1924-25, and all state-worked railways were instructed to send copies of all their foreign indents to this department, for scrutiny, with a view to obtain its advice regarding any articles which were manufactured and could be suitably purchased in India.[4] The

[1] Railway Administration Report, 1920-21, p. 18.

[2] Fiscal Commission Report, 1922, para. 288.

[3] Further re-organization of the Stores Purchase Department, together with the establishment of a Stores Standardization Committee, was effected in 1927-28. See Administration Report, 1927-28, Vol. I, pp. 6-7.

[4] The Stores Purchase Policy before this is explained in Administration Report 1920-21, Ch. IX. The preference to British firms over others amounting sometimes

working of this new policy was not, for a few years, entirely satisfactory, and certain extravagant and indefensible practices were alleged.[1] An immediate and full publicity of all tenders, and finally of indents placed in India and abroad, was urged, in order to keep the officials of the Stores Purchase Department within proper check. In 1927-28 the Stores Department was further reorganised, but the importance of the department has not in recent years been as great as it was originally proposed to be, because, in consideration of the principle of allowing the Agents of railways full liberty to manage the railways according to best commercial principles the Railway Department does not want to interfere much with the purchase of stores.

The bounty paid during 1924-25 to 1926-27, under the Steel Industry Protection Act, amounted from 12% to 18% of the price of the wagons of different types, and helped the industry substantially.[2] The Peninsular Locomotive Company was established at Jamshedpur for the manufacture of locomotives. After an unsuccessful petition to the Tariff Board for assistance the company directed attention to the manufacture of wagons and parts.[3]

A new situation arose in 1926. After careful examination of the whole question of wagon requirements, in the light of improvements brought about, both by better organisation and methods of working as well as by speeding up of repairs, it was found that considerable increase in the wagon-user was effected. After consultation with the heads of the class I railways, an average wagon-user figure for

to 30-50 per cent, was admitted by the High Commissioner for India, Sir W. Meyer, in his evidence before the Acworth Committee, 1920-21, Vol. II, p. 248.

[1] Letter of the Indian Merchants' Chamber of Commerce, Bombay, to the Government of India, dated the 27th May 1926.

[2] The Steel Industry Protection Act was modified on the 21st March 1928, and thereafter the rate of protective duty applicable to railway wagons etc., has been fixed at 10 °/₀ *ad valorem* with an additional duty on those of non-British origin.

[3] Administration Report, 1923-24, p. 53, for reasons for refusing protection.

each railway was determined, based on net-ton-miles per wagon-day, and it was decided that until that figure was reached no railway would be entitled to increase the stock of wagons. Applying this formula the Railway Board discovered that they would not be justified in placing any orders for broad gauge general service wagons in 1927-28.[1]

This decision caused considerable difficulty to private wagon-builders in India. In January 1927, therefore, government offered to purchase the firms of the Indian Standard Wagon Company and the Peninsular Locomotive Company, to which the latter agreed. Further, the state-worked railways were instructed, and the company-managed railways were invited to call for tenders in India only for their 1927-28 requirements for carriage under-frames and wagons.

The following table shows the value of indigenous materials, purchased by Indian railways, excluding coal, stone, bricks, lime etc., as compared with their total purchase of materials during different years :

Total Value of Stores purchased by principal railways

(in lakhs of rupees)

Year.	Value of indigenous stores.	Tota	Percentage of Indigenous stores to total.
1915-1916 (*a*)	1,42	6,74	21
1918-19	7,06	12,73	55
1919-20	8,30	23,70	35
1920-21	9,01	30,26	29
1921-22	10,73	38,61	28
1922-23	9,17	30,86	29
1923-24	8,27	27,06	30
1924-25	8,37	20,83	40
1925-26	8,73	23,30	37
1926-27	10,60	23,14	45
1927-28	10,58	30,94	34
1928-29	12,81	29,63	43

(*a*) Figures before 1915-16 are not available. See Administration Report, 1920-21, Vol. I, p. 51.

[1] Administration Report, 1926-27, pp. 61-62.

The above figures do not take into account the expenditure in India on work done and materials manufactured in railway workshops, nor do they include coal, stone, brick, lime, etc., invariably purchased in India. The value of these latter amounted to Rs. 4,89 lakhs in 1926-27, and Rs. 4,82 lakhs in 1927-28. The cost of work done and materials manufactured in railway workshops was estimated in 1926-27 at Rs. 13,78 lakhs, which included a certain amount of expenditure on stores already included in the statement given above. Indigenous supplies consist mainly of permanent way materials, tools and stores, over and above coal, brick, lime, and ballast etc., while most of the other supplies including the more costly items of locomotives, rolling stock, and electric plants, still continue to be imported.

X. *Indianisation and Staff Problems*

At an early stage of the development of Indian railways the need for increased employment of Indians in the railway services was emphasized by the Government Director of Railways, in the interest of economy.[1] In 1870 the Secretary of State and the Government of India declared that all appointments on the state railways were open to Indians, and every encouragement should be given to their employment. The superior officers of the Public Works department were urged to endeavour, as far as possible, "to train the natives of the country in all those branches of handicraft that are necessary to the construction and maintenance of railways.[2] A start was thereafter made in employing Indians as shunters and drivers and substantial economy was effected thereby.[3] In 1879 the

[1] See *supra*, Ch. II.

[2] P.W.D. Circular No. 35, dated 29th June 1870.

[3] *Supra*, Ch. IV.

Government of India declared that "all posts in the Revenue establishment of state railways are open to natives of India, and as men in every respect qualified for the superior grades are found, the Government of India will be glad to receive from local administrations recommendations for their employment in suitable positions." [1]

In 1910 and 1911 the Hon'ble Mr. Gokhale strongly criticised the exclusive policy maintained by the Indian railways in spite of the promise given by the Secretary of State and the Government of India.[2] It was argued by the railway administrations that, of the total number of employees, 95 to 97 per cent had always been Indians, but this argument fell flat on the Indian public, whose main objectives were the superior and upper subordinate services. In 1910, of 820 officers on state-managed railways drawing Rs. 200 to Rs. 3,000 per month, only 47 were Indians, confined mainly to the accounts department and the lower offices of the engineering and traffic departments. The position on company-managed lines was worse, for, of over 1,000 appointments ranging from Rs, 200 to Rs. 3,500, only 30 were held by Indians, the bulk of them drawing salaries less than Rs. 500 per month. The attitude of the Railway Board at that time was expressed in the following: "The safety of the travelling public and the vast interests of commerce do not justify the railways of India of readily agreeing, for political reasons, to a large reduction in numbers of a class of officers which has proved its fitness for the very technical public work entrusted to it, in favour of a class which, except in a few individual instances, has yet to prove its capacity in the same field." [3]

[1] P. W. D. Resolution Nos. 128-44 R.E., dated 10th November 1879.

[2] Hon'ble Mr. Gokhale's Speeches on the Financial Statement, Legislative Council Proceedings, dated 9th March 1910, and 8th March 1911.

[3] Reply given by Sir T. R. Wynne, President of the Railway Board, to Hon'ble Mr. Gokhale's criticisms. Legislative Council Proceedings, 1910-11. pp. 377-78,

Indians have refused to admit the superiority of Europeans and Anglo-Indians over them in intelligence or general administrative ability, and have claimed that wherever equal opportunities have been given they have proved quite fit for any kind of work. For some of the very technical services as those in Locomotive and Carriage and Wagons Departments, the employment of Europeans with specialised training was unavoidable so long as adequate arrangements for the training of Indians were not made. But what was most strongly resented was the discrimination made between Indians and Europeans and Anglo-Indians, in the status, emoluments, and conditions of service, even for the same kind of work.

The Islington Public Services Commission for India considered these claims, and recommended in 1915, that until such time as suitable arrangements were made for the recruitment of the whole railway service in India, 50 per cent of the appointments made in India should go to pure Indians.[1] For different railway departments different methods of recruitment were suggested for the superior services, and the need for training facilities for Indians, either in India or abroad, was emphasized.

The question of Indianisation has been mixed up with politics, although, at earlier stages of railway development the economies that would follow were urged as the primary consideration. Indians suspected that the reliance of government and of the railway companies on European and Anglo-Indian officers was born more out of military and political reasons, than out of considerations of economy and efficiency. The formation of a Volunteer Corps out of the European and Anglo-Indian Officers on the railways and the exclusion of Indians therefrom is considered an evidence of this policy.[2]

[1] Islington Public Services Commission for India, 1915. Summary of Recommendations, para. 17, Annexure XIX, Vol. I of Report.

[2] In his evidence before the Islington Public Services Commission, Sir T. Ryan,

After the War, and with the institution of political reforms in 1921, the insistence of the Indian public for Indianisation of all services has become ceaseless and irresistible. The Acworth Committee fully sympathised with what they thought a natural grievance. They found that none of the highest posts were occupied by Indians, very few of the higher.[1] Even in the subordinate posts of the official staff the position was no better. They, therefore, felt that the grounds for it should as far as possible be removed. In the matter of appointing Indians the state-managed lines presented much better percentage of Indians to total than the company-worked railways, although some companies had nearly caught up with state lines.[2] The Government of India was advised to establish a minimum percentage of Indians to be reached within a fixed period. Adequate facilities for technical training and extension of educational arrangements in all branches of railway operation, economics, and commercial organization were, at the same time, urged, not only with a view to Indianisation, but on account of the experience of other countries of the increase of efficiency of subordinates and officers that followed from a progressive and continuous education of the staff.[3] A revision of the methods of

Secretary to the Railway Board, said, that besides a business concern the railways were "also a necessary factor in maintaining the security of the country, both from a military point of view, and from the point of view of internal security, and that had to be taken into consideration in dealing with the recruitment of staff......In fact the question of more immediate importance was the safety of the public, and this necessitated a very large reliance for the present on European officers." Evidence before Islington Public Services Commission, para. 80, 984.

[1] On the principal railways, out of 1,749 posts classed as superior, 182 only were filled by Indians, 24 of whom only reached the grade of district officers. Acworth Committee Report, p. 58.

[2] The percentage on the state lines was 14·6. The East Indian Railway had almost the same percentage, the B. N. Railway 12·1, and the Assam Bengal 19·2. The G. I. P. Railway had only 5·0 per cent and the Burma Railways under 3 per cent. The highest percentage of 15·2 was, however, reached by the Nizam's Guaranteed State Railway Company.

[3] Acworth Committee Report, 1921, pp. 58-59.

recruitment and training of probationers for the Traffic Department was also recommended.

In 1921-22 the Council of State and the Legislative Assembly emphasised " the necessity of taking early steps to increase the number of Indians in the higher grades of service of the state-managed railways and of devising means to secure the adoption of a similar policy by companies managing state railways." [1] The Government of India accepted the resolution and agreed to increase the number of Indians, in so far as such increase was consistent with efficiency and economy. The railway companies also expressed their agreement with the government policy.

The Transportation School at Chandausi was opened in March 1925, as an outcome of the recommendations of a special officer who examined in 1922-23 the question of training of staff, particularly of the junior officers and upper subordinates.[2] Area schools have also been opened at various places in recent years, and in April 1930 a Railway Staff College for Officers has been established at Dehra-Dun.

The Lee Commission on Indian Public Services recommended in 1924 substantial improvement in the conditions of service on the railways, and advised that the Government of India should recruit for the Superior and Upper subordinate services Indians to the extent of 75 per cent in a few years.[3] The Government of India accepted these recommendations and the companies managing railways in India also agreed to do so.[4] A substantial move towards

[1] Resolution of the Council of State, quoted in Administration Report, 1922-23, p. 23.

[2] For full description of the School and Courses see Administration Report, 1925-26, pp. 55-59.

[3] Lee Commission Report, para. 42 (*d*).

[4] The exact terms of recommendation accepted by government are: "The extension of existing facilities (for training) should be pressed forward as expeditiously as possible in order that recruitment in India may be advanced as soon as practicable, up to 75 per cent of the total number of vacancies in the Railway Department as a whole, the remaining 25 per cent being recruited in England."

Indianisation has been made since, and racial discrimination in the superior services has been removed. But in spite of the declaration of policy by government, inequality in the pay and conditions of service in the grade of upper subordinates, between Indians, Anglo-Indians, and Europeans, still continue in many directions, to the dissatisfaction of Indians of the same rank.[1]

In July 1926 the rules for recruitment and training of officers were revised, and a system of competitive examination, with provincial and local Quota Committees selecting the candidates for examination, has been introduced.[2] These rules were further revised in 1927-28.

The following two tables showing the number of superior officers and subordinates on Class I railways, except Nizam's Guaranteed State Railway and Jodhpore Railway, and the percentage of Asiatic Indians to total, indicate the progress of Indianisation during the last few years. From 1925 Anglo-Indians have been classed under "Statutory Indians," and the special benefits awarded to Europeans by the Lee Commission were denied to them.

I. Superior Officers on Class I Railways except N. G. S. Ry. and Jodhpore Railway

On the 1st of April.	Europeans.	Anglo-Indians.	Asiatic Indians.	Total.	Percentage of Asiatic Indians to total.
1924	1,510	89	289	1,888	15·3
1925	1,516	87	328	1,931	17·0
1926	1,496 (a)	152 (a)	397	2,045	19·4
1927	1,520	169	454	2,143	21·2
1928	1,504	182	510	2,196	23·2
1929	1,469	169	545	2,183	25·0

(a) The sudden drop in the number of Europeans in 1926 and a rise in that of Anglo-Indians were due to a transference to the latter group of some who formerly had passed off as Europeans.

[1] During the budget debate in the Legislative Assembly in February 1929 many of the existing inequalities were brought out including a circular by the Agent of the E. B. Ry. favouring Anglo-Indians.

[2] Railway Department Resolution No. 2058-E, dated 15th July 1926.

II. Upper Subordinates on Class I Railways except N. G. S. Ry. and Jodhpore Railway

On the 1st of April.	Europeans.	Anglo-Indians.	Asiatic Indians.	Total.	Percentage of Asiatic Indians to Total.
1924	2,818	2,786	1,800	7,404	24·3
1925	2,810	2,949	2,081	7,840	26·5
1926	2,126 (*a*)	3,809 (*a*)	2,238	8,173	27·4
1927	2,076	3,765	2,454	8,295	29·6
1928	2,046	3,784	2,787	8,617	32·3
1929	2,051	3,800	3,090	8,941	34·5

(*a*) The sudden drop in the number of Europeans in 1926 and a rise in that of Anglo-Indians were due to a transference to the latter group of some who formerly had passed off as Europeans.

The following table shows the total number of Indian railway employees at different periods :—

	Railway mileage '000s.	Total No. of employees.	Asiatic Indians.
1903	29·6	402,249	387,566
1913-14	34·6	633,694	615,269
1918-19	36·8	685,965	668,803
1922-23 (*a*)	37·6	749,680	730,668
1924-25	38·8	745,216	722,590
1927-28	39·7	802,209	782,684
1928-29	40·9	807,866	788,462

(*a*) 1922-23 figures are given to show the extent of staff economy effected afterwards.

The Retrenchment Committee noted that from 1913-14 to 1922-23 the increase in staff was out of proportion to the increase of railway mileage and work. Some economy in the staff was made thereafter, but this could not be maintained in recent years.

An important problem in connection with Indian railway staff has been the increasing unrest amongst the lower grade

of workers leading to strikes and dislocation of work in many cases. The first noticeable strikes were on the East Indian and Eastern Bengal Railways in 1906. In 1908 a small strike occurred on the Locomotive and Carriage and Wagons departments of the Great Indian Peninsula Railway. This was followed in 1909 by a general strike on the Madras and Southern Maharatta line lasting for more than five weeks. There were further strikes on the Great Indian Peninsula and Oudh and Rohilkhund Railways in 1917-18, followed by a five per cent increase of pay of some subordinates. In 1919-20 labour unrest took a rather serious form on the Bengal and North Western, Rohilkhund Kumaon, and East Indian Railways. These were met by increased wages and certain other privileges granted to certain employees. The most serious strikes took place in 1921-22 on the East Indian, Assam-Bengal, Great Indian Peninsula, Bombay Baroda and Central India, and Rohilkhund Kumaon Railways. On the first two lines the period of dislocation extended over nearly three months in each, and considerable loss was entailed. In 1924-25 there was indication of unrest on the North-Western and South Indian Railways. Since that date every year strikes of more or less severity have occurred on one or more of the Indian lines, particularly on the Bengal and North-Western, North Western, Great Indian Peninsula, Bengal Nagpore, East Indian, and South Indian Railways. The last three have suffered considerable agitation during 1928.[1] The Government of India proposed, in 1929, to have the entire question of Indian labour thoroughly examined by a Royal Commission. It was further decided to institute a thorough and systematic investigation of the conditions of service of lower-paid railway servants in order to

[1] Resolutions were moved for adjournment of the House, and for Appointment of Committee of enquiry into grievances of Railway employees, in Council of State on the 5th September 1927, and in Legislative Assembly on the 14th September 1927.

ascertain what measures are most urgently required for their improvement.[1]

XI. *Miscellaneous*

From 1900 to 1912 Indian Railway statistics and administration reports were compiled by calendar years. As this led to certain difficulties of financial adjustment, it was decided to revert to the financial year from 1913-14.

(*a*) *Statistics Reforms*

The compilation of statistics was carried out up to 1922 in accordance with the rules laid down by the Statistics Revision Committee of 1880, with certain modifications in the secondary figures and in the presentation from time to time.

In 1920-21 the Acworth Committee declared that the then form of statistics, introduced at almost a " mediaeval " period of railway history, needed radical reform.[2] The Government of India had recognised the unsatisfactory character of the railway statistics for some time. The question of a general overhaul was taken up in 1913, but was deferred owing to the War. In 1921, an officer, placed on special duty for the revision, made a study of up-to-date procedure in England and America. A committee was appointed in the following year to suggest the alterations, and on its recommendation a revised system of statistics was adopted from 1st October 1923. The main changes have been :[3]

[1] Railway Budget Speech (1929-30) of the Member for Railways, 19th February 1929.

[2] Acworth Committee Report, Vol. I, p. 45.

[3] For details of present Indian Operating Statistics see Major F. H. Budden's " Railway Statistics and the Operating Officer," and Administration reports, 1922-23, and 1923-24.

(*i*) The classification of railways under three classes relieving the smaller railways from compiling many detailed statistics.

(*ii*) Revised operating statistics which allow of a more accurate comparison between individual railways in India, as also between Indian railways and those of foreign countries.

(*iii*) Introduction of monthly statistics in addition to the yearly summaries to supply up-to-date information of the working to the railway administrations and to the Railway Board. The principles of economy and practical usefulness of the statistical summaries, necessitating curtailment of details, elimination of negligible railways for certain statistics, and quicker publication of operating statistics were kept in view in these revisions. The Statistical department of the Railway Board was also re-organised.

(*b*) *Accounts Reforms*

The Acworth Committee was equally critical of the system of accounting and auditing then in force.[1] As recommended by it a Committee of Senior Accounts Officers was appointed in 1921-22. After an enquiry into various systems in force on English and American railways the Committee proposed many valuable alterations.[2] These have been carefully reviewed in the light of the relation of the railways to the Government of India and to the Indian legislature, and reforms were introduced between 1922-23 and 1925-26. The most outstanding points in the revision were :

(*i*) Separation of Railway Finance from General finances;

[1] Acworth Committee Report, 1920-21, p. 44.

[2] Indian Railway Accounts Committee, 1921-22, under Chairmanship of Mr. G.W. V de Rhe Phillipe.

(*ii*) Creation of the Railway Reserve Fund;

(*iii*) Institution of the Depreciation Fund;

(*iv*) New Rules for the allocation of capital and revenue expenses on state-managed lines;

(*v*) Separation of Accounts from Audit;

(*vi*) Establishment of a Clearing House; and

(*vii*) Re-organisation of Workshops and Stores Accounts.

(c) *Depreciation Fund and Revision of Rules for Revenue and Capital Expenditure*

The separation of Railway Finance in 1924-25 and the creation of the Reserve Fund have been dealt with in the previous chapter. In 1922-23 the Railway Finance Committee agreed to the institution of a Depreciation Fund for state railways, so that the money necessary for the rehabilitation programme might be automatically provided for in the budget. A special committee was appointed to fix the economic life of various wasting assets, and on its recommendation the Depreciation Fund was created with effect from 1st April 1924. A change in the rules of allocation of expenditure between capital and revenue was also effected, with a view to bring them into line with those adopted in commercial concerns.[1] The proposals have followed the recommendations of the Acworth Committee that revenue should be debited with its full share of expenditure attributable to each year, and that by the time the useful life of an asset has expired, its full original cost, less any scrap value, should have been written off out of revenue. The alteration in the rules of allocation of expenses between capital and revenue could only be applied to state-managed lines, for their extension to company-managed railways would involve a modification of the terms of contract. The

[1] Administration Report, 1923-24, p. 8.

Depreciation Fund was, however, instituted for all state-owned railways. The new rules took effect from 1st April 1924.[1]

The Depreciation Fund is meant only to provide for the cost of renewals of complete units of wasting assets.[2] The working expenses of Indian railways, therefore, still continue to have an uncertain element in the annual provision for repairs and maintenance. This may be a highly fluctuating factor, and there is nothing at present to prevent the state from withholding money for the bare maintenance of the railway property, in case of financial stringency. A reserve for repairs or a revision of the rules of the Depreciation Fund may remove this evil. At the close of 1928-29 a sum of Rs. 12·51 crores was accumulated in the depreciation Fund and Rs. 18·42 crores in the Railway Reserve Fund.[3]

Under the rules of allocation previously in force, which still remain operative on the company-managed lines, the broad principle adopted was that revenue should pay for the cost of replacing or renewing property to the same standard of effectiveness as first provided out of capital funds, and that only when there was a genuine improvement of that standard should a measure of the betterment be met from capital. Under this principle capital is still charged only with the equivalent of the expenditure on the property as installed for the first time and without regard to subsequent replacements thereof. Under the new arrangements the allocation of expenditure follows the standard of original cost. When an article is replaced at a cost higher than the original cost of such article, the original cost is charged to revenue, that is the Depreciation Fund, and the excess over

[1] For details of the rules see Administration Report, 1924-25, App. D.

[2] Administration Report, 1924-25, Vol. I, p. 4.

[3] Railway Budget Memorandum, 1930-31, p. 8.

the original cost to capital. The original cost principle of allocation has the drawback of carrying the railway towards over-capitalisation. This tendency is counteracted by two fundamental conditions, that capital will be relieved of (*i*) the original cost of all property abandoned or destroyed and not replaced, and (*ii*) the difference between the original cost of a property and the cost of its replacement, whenever the latter happens to be lower than the former, thus operating to bring the amount of charge to capital in consonance with the actual cost incurred on existing structures and equipment.[1]

(*d*) *Separation of Accounts from Audit*

The Acworth Committee laid considerable stress on placing on the Railway Department the responsibility for its own accounts. In furtherance of this proposal it was decided, in September 1925, as an experimental measure, to separate railway accounts and audit on the East Indian Railway.[2] The Auditor-General has been made responsible for audit alone, and the maintenance of accounts and the control of accounts staff has been transferred, not to the Railway Board as such, but to the Financial Commissioner of Railways. In 1928 and in 1929 similar steps have been taken on the North-Western and the Great Indian Peninsula Railways. A Statutory Audit office in connection with the separation was established in December 1926. This has been strengthened in later years.

The whole subject of Indian railway accounting, audit and statistics, including workshops and stores accounts, was investigated in 1927-28 by Sir Arthur Lowes-Dickinson, an

[1] Administration Report, 1924-25, Vol. I, p. 3.

[2] Resolution of the Legislative Assembly on separation of Audit and Accounts on Railways, dated 15th September 1925.

expert specially deputed for the purpose. Considerable detailed changes in the organization and methods of work were recommended by him.[1] These are being re-examined and gradually given effect to as found expedient.

(e) *Railway Clearing Accounts Office*

The establishment of a Clearing House for Indian Railways is an old question, and was proposed at the first General Conference of railway delegates in 1880. It was emphasised by some witnesses before the Parliamentary Select Committee of 1884. In 1896 a scheme was definitely prepared. In 1903 Mr. Thomas Robertson also advocated its establishment, both for clearing accounts of interchanged traffic, as well as for undertaking questions of interchange of rolling stock, mileage and demurrage on vehicles, and similar matters on the plan of the British Railway Clearing House.[2] The Indian Railway Conference Association had the question under consideration for many years, but the great distance of some parts from any centre which could be selected, and the various classifications of traffic and methods of charging on different railways, caused almost insuperable difficulties. The work of the simplification of the tariffs was slow and the conditions which permit the introduction of Clearing House methods were considered for a long time to be non-existant.

In march 1925, the question was revived, and after an experiment on the North-Western Railway, it was demonstrated that in spite of want of simplification of tariffs grouped divisions of traffic could be effected on the basis of ton-mileage carried on each railway under praticular commodities or particular rates. The Railway Board decided to establish

Sir Arthur Lowes-Dickinson's Report, dated 10th August 1927.
Robertson's Report, 1903, pp. 98-100.

an experimental Central Clearing Office on the North-Western Railway in December 1925. The clearing accounts office procedure proved, in actual practice, efficient and economical, and encouraged by the success of the experiment the regular Clearing Accounts Office was opened on the 18th December 1926.[1] The central offices of the Clearing House have been transferred to Delhi in 1928, and between January 1927 and March 1928 all the state-managed railways have entrusted to it their accounting and apportioning work for interchanged traffic. It has been proposed to establish a second office in Madras for the work in South India, so that company-managed lines also may have the facilities of a Clearing House.[2]

(f) *Separation of Strategic Lines from Commercial*

Apart from these purely financial and accounting reforms the question of financial separation of the strategic railways from commercial lines managed by the state was taken up after the War. The division in respect of strategic railways, originally constructed primarily for military rather than commercial purposes, was made in 1888. In 1921-22 these lines comprised 1,775 miles in India, and 29 miles in Aden. In India they were entirely on the North-West Frontier and comprised about 43% of the North-Western state-managed railway system. Like commercial railways they were financed out of the ordinary railway programme, and the capital was included in the North Western Railway, which had to bear the cost of maintenance and working in addition to the interest charges on capital. Heavy losses were borne by the state railways on account

[1] Railway Budget Speech by Chief Commissioner for Railways, 1927-28, Annexure "A."

[2] Administration Report, 1927-28, Vol. I, p. 6.

of these strategic lines, and it became a matter of public criticism. In February 1922, the Council of State urged that in future separate expenditure and revenue accounts should be kept for the strategic railways, and the capital outlay on such lines as well as losses in working be debited against the Military Department.[1] Government accepted the first part of the recommendation, but negatived the second portion on the ground mainly that it was an accepted principle of ordinary government accounts that the department incurring expenditure should bear it, whether other departments benefit thereby or not. It was argued that the military authorities might claim to charge civil departments with the value of certain supplies and services, particularly those rendered in the maintenance of internal law and order, if the claims of the Railway Department were met.

When, however, Railway Finance was separated from General Finance in 1924-25, it was agreed that in determining the contribution of the railways to general revenues both the interest charges as well as losses on working of strategic lines should be borne by the general revenues and should therefore be deducted from the contribution calculated in accordance with the convention.[2]

(g) *Central and Local Advisory Councils.*

The Acworth Committee found that the Indian Railways needed closer touch with public opinion and recommended the formation of Central and Local Advisory Councils,

[1] Resolution in the Council of State, dated 13th February 1922.

[2] Resolution on Separation of Railway Finance adopted by the Legislative Assembly on 20th September 1924, Clause 2. At the close of 1927-28, out of the sum of Rs. 694 crores of net Government capital at charge, Rs. 32 crores were for strategic railways. The net loss on the working of these lines, including interest charges, was Rs. 2·06 crores, in 1927-28, and has been generally about Rs. 1·8 crores during the past few years. Administration Report, 1927-28, Vol. I, p. 17.

similar to those in Germany and Poland. It was emphasised that the railways would be saved from much hostile criticism if the representatives of the people could bring forward their grievances directly to the railway administrations, and could, at the earliest possible moment, be acquainted with the steps that were being taken to redress those complaints. It was suggested that the councils should be composed of representatives from several government departments concerned, and leading commercial and industrial associations, together with a proportion of representatives of rural interests and of the travelling public in different parts of the country. In the absence of any prominent associations definitely identified with these interests, representatives might be appointed by the different Legislative Councils, not necessarily from amongst their own members. The central council was to have in the beginning not more than 25 members, and the local councils about 12.[1]

The Government of India agreed to the suggestion generally, but found it impracticable to constitute the Central Advisory Council exactly as recommended, and instead formed a council in March 1922 with members selected from the Legislative Assembly and the Council of State. The first council was evolved from the Railway Finance Committee, and in 1923, a change was made in the composition, making it a committee of business-men of the two Houses with a few lay members. Attempt was thus made to have the various interests mentioned by the Acworth Committee represented by properly chosen Members of the Legislature. In September 1924, the composition was again revised, when the separation of railway budget was agreed to. The Central Advisory Council has thereafter been constituted of: one official member and eleven members elected by the Legislative Assembly composing

[1] Acworth Committee Report, pp. 46-47.

the Standing Finance Committee for railways, together with one further nominated official member, six nominated members selected from a panel of eight elected by the Council of State from their body, and six non-official members selected from a panel of eight elected by the Legistative Assembly from that body, making 25 in all.[1]

The Central Advisory Council has generally discussed broad questions of railway policy, including purchase of stores, racial discrimination, recruitment, training and conditions of service of staff, amendment to the Railway Act, institution of a Rates Tribunal, prevention of malpractices on the railways, and amenities for the travelling public. In fact, the council, due to its composition, has acted more or less as a political critic of the railway administration rather than a commercial or operating, and the Railway Board has largely used the council for publicity of government attitude towards questions that have given or are likely to give rise to controversy and public criticism. This has been of much help to the Railway Department so far as its relation to the Legislature is concerned. But although in this way the Council has been rendering a service, which for a system of nationalised railways is very important, yet the principal purpose which the Acworth Committee had in view, of bringing the commercial and operating arrangements of the railways in line with the requirements of the users of the rail, has not been served.

The Local Advisory Committees have, however, been of a different character, and the recommendations of the Acworth Committee have been more closely followed in their formation. A local consulting committee composed of influential members nominated by the railway from amongst commercial men and the public, had been in

[1] Resolution on Separation of Railway Finance, 20th September 1924, Clause 6.

existence on the East Indian Railway from 1890, and encouraged by its usefulness the Eastern Bengal Railway also had a similar body constituted. In October 1923, the Railway Board prepared rules for the formation of Local Advisory Committees on all state-managed lines, and requested the company-managed railways to take similar action. Each railway administration is under these rules asked to have at least one main Advisory Committee of not more than 12 members. The Agent is to be the *ex-officio* chairman. The local government, in whose jurisdiction the headquarters of the railway are situated, nominates two government members. Three members representing rural interests and the travelling public are chosen by the local Legislative Council, not necessarily from amongst its own members. One member is sent by the local municipal corporation at the railway headquarters; and five members represent industries, commerce, and trade, being nominated or elected by selected local bodies with predominant interests in the railway's work. Separate branch local committees at large centres may be formed. The subjects which the committees may discuss are: alteration in timetables and services, rates and fares, new projects and extensions, design and make-up of new rolling stock, and matters affecting the general public interest or convenience.[1] Questions of personnel, discipline, and appointments are not allowed. Otherwise, under certain conditions, any member may bring forward a subject before a meeting.

The functions of the committee are purely advisory, but in case an Agent is unable to follow the advice of the majority of members, he has to bring the matter to the notice of the Railway Board, to whom all minutes of meetings are forwarded. Subsidiary rules have been framed by different railways for the proper conduct of

[1] Memorandum regarding Local Railway Advisory Committee: Administration Report, 1922-23, App. 2.

business, and between 1922-23 and 1926-27 all state-owned railways and several others had Local Advisory Committees instituted.

Some of the railways that extend over two or more provincial areas and have several big commercial centres on their line have modified the constitution of their committees with a view to make them fairly representative, and in some cases branch local committees have been formed. The names and addresses of the members of the committees are published in the time tables in order to enable the public to get in touch with them. More than 108 meetings were held in 1927-28, of Local Advisory Committees of state-owned railways, and the subjects discussed indicate the increasing value attached by the public and the railway administrations to this scheme.[1] Persistent efforts are, however, being made to have the powers of the committees enhanced, and to make them more thoroughly representative of the people.

In addition to these committees each Divisional Commercial Officer has, on some railways, been advised, during 1928-29, to hold periodical conference at important commercial centres, with influential traders and manufacturers, with a view to find out how far the railway services to the public can be improved.[2] The formation of Regional Advisory Boards of traders, as in the United States of America, may be the outcome of these conferences.[3]

(h) *Liaison with Provincial Governments and Tours of the Members of the Railway Board*

The Acworth Committee drew attention also to the need for establishing some liaison of the Railway Board

[1] Administration Report, 1926-27, Vol. I, p. 4, and Administration Report, 1927-28, Vol. I, p. 3.

[2] Major F. H. Budden's Special Report on effecting improvements of working on the Indian State Railways, 1928.

[3] Sherrington, Economics of Rail Transport, Vol. II, pp. 64-68.

with provincial governments, which are much more closely in touch with the local population than the Government of India.[1] This has been effected since 1923-24 by the tours undertaken regularly by the Members of the Railway Board to various important cities and provincial head-quarters. These visits are notified in the press and through correspondence to the local government, chambers of commerce, and other public bodies. Opportunities are given to provincial governments and to important traders to bring forward their suggestions to the touring members and to have direct discussion thereon. It has been possible through these visits to arrive at decisions more quickly on many important matters, and to bring about a better understanding between the Railway Board and local administrations, and the former and commercial bodies. The Chief Commissioner and Members of the Railway Board have also held meetings with Agents of the principal railways for the purpose of discussing outstanding problems of importance. In the course of the tours, while any Member of the Railway Board is able to deal with the problems put before him in a general way as representing the Board, the tendency has been for each to concern himself with the particular aspect of railway working of which he has special knowledge. This has been the natural consequence of dividing the work of the Railway Board among its Members, not on a territorial basis but on that of subjects.

(*i*) *Railway Conference Association*

Evolving out of the periodical conferences convened by the Government of India in the nineteenth century, the Indian Railway Conference Association was formed as an independent organization of all railway administrations in India, and was formally established in October 1903. It was primarily

[1] Acworth Committee Report, Vol. I, p. 48.

constituted for framing general rules and bye-laws, regulations for the interchange of traffic, allocation of charges for joint terminals and transhipment, interchange of rolling stock, demurrage and other charges for vehicles, uniformity of working and standardisation, etc. It also acted as a board of conciliation and claims arbitration as between different railways, and as an advisory body to the Railway Department for all matters referred to it. All questions of railway management affecting the mutual relations of the railways themselves and also as between them and the Government of India were dealt with by it. It played a valuable part in the simplification of tariff, and in bringing about a general classification of goods; but it did not fix rates and fares, nor interfere in matters of internal administration. Members were free to refer to the Association proposals relating to rates and fares, division of through rates, interchange of passes and privilege tickets, etc., but any regulations made in connection with these were operative only to the extent agreed to by the railways concerned.

In 1925, the Railway Board noted that as a result of the East Indian and Great Indian Peninsula Railways being brought under state-management much of the work of the Association was eliminated. Moreover, it was necessary for the state, as owner and manager of the majority of the broad gauge railways, to take direct charge of the standardisation of equipment, which had been dealt with from time to time, by the Association. The Railway Conference Association was, therefore, advised to define the range of its future activities. In March 1926, accordingly, a number of important changes were decided on, recognising the separate functions of the Association, acting on the one hand as a body dealing with interchange of traffic and on the other as a medium for the interchange of ideas on technical railway subjects. Of the changes effected the principal are the formation of an Operating Committee for interchange to

deal with all questions affecting the movement and interchange of rolling stock and cognate matters, the abolition of the Locomotive and Carriage Superintendent's Committee, and the formation of different sections such as Mechanical, Engineering, Statistical, Administrative, etc., to report, in an advisory capacity, on questions relating to those subjects. Minor alterations were also made in the rules of the Association to obtain decisions expeditiously. The modification of the functions in the manner indicated admits of a more intensive and useful study of the technical problems, with a critical and expert examination of the methods introduced by state railway engineers. In November 1927, the offices of Director of Wagons interchange and of Secretary, Indian Railway Conference Association, were amalgamated under one officer designated General Secretary.

(j) *Accidents*

The following table gives the accidents reported as compared with passenger journeys, passenger-miles, and train-miles, during the years 1909, 1913-14, 1918-19, 1924-25, and 1928-29.

	1909		1913-14		1918-19		1924-25		1928-29	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Passengers	190	614	268	815	343	1,119	418	1,312	418	1,368
Rly. servants	365	662	480	845	456	842	466	1,489	411	4,864[1]
Other persons	1,376	347	1,590	482	1,764	624	2,061	857	2,529	955
Total	1,931	1,623	2,338	2,142	2,563	2,585	2,945	3,658	3 858	7,187[1]

	1909	1913-14	1918-19	1924-25	1928-29
No. of Passengers conveyed (millions)	329	458	460	576	620
Passenger-miles. (millions)	12,365	16,614	18,040	19,910	22,097
Train-miles (millions)	128	156	159	164	185

[1] This sudden increase in the injuries to railway servants is accountable by a change in the basis for statistical calculation,

It is extremely hard to draw any inference from these figures, for one or two bad accidents in a year, due perhaps to causes absolutely beyond control, like the overturning of a train in a cyclone, or sudden wash-away of bridges and permanent-way, may very materially affect the statistics of accidents on Indian Railways. It is unfortunate, however, that the number of accidents to persons other than passengers and railway servants is appalling. In 1927-28, of the total persons killed, more than 74% were " other persons." In 1928-29 this was above 75%. This is largely due to want of proper fencing at many places and to the leniency in dealing with trespassers. The number of railway servants killed or injured was, up to 1924-25, becoming alarming. Agents of railways were then addressed about the importance of ensuring safe methods of working. A general campaign of "safety-first" has thereafter been undertaken by most of the Class I railways, but the reduction in the accidents to railway servants has not yet been satisfactory.

CHAPTER IX

Indian Railways, 1924-25 to 1928-29

I. General Situation

With the separation of Railway Finance from General Finances in 1924-25, the present era of Indian railway development has begun. It is not yet possible to express judgment on the new policy and the working of the railways thereafter. The great success attained in rehabilitation and improvement during recent years, is, on the one hand, attributed mainly to the separation of railway budget and the extension of state-management, while, on the other hand, doubt is expressed as to how far the progress has been caused by and not merely co-incident with the changes.[1] It can be stated without hesitation, however, that since the Acworth Committee's report, the financial reforms effected on the recognition of the pre-eminently commercial nature of state-railway undertaking, have been highly beneficial. Time only will show how far these reforms, including the intsitution of the Depreciation and Reserve Funds, and the separation of audit and accounts, are inseparable from the question of separation of railway finance, and how far, during years of great financial stringency, the state will respect the convention for the railway's contribution to general revenues. Even as it is, the Indian Legislative Assembly is growing jealous of the increasing balances in the Railway Reserve Fund.[2]

[1] Railway Budget Speeches, 1929-30, by Sir Purshottamdas Thakurdas, and Mr. Jumnadas M. Mehta.

[2] A special committee is, for more than a year, examining the convention for the railway's contribution to general revenues in connection with a proposed revision of the separation of Railway Finance (May 1930).

The interest taken by the Legislative Assembly and the Council of State in the working of railways continues to increase.[1] The subjects in which greatest interest is shown are semi-political, such as, Indianisation, recruitment and training of staff, racial and commercial questions, grievances of passengers, stores purchases, consumption and purchase of coal, loss on strategic lines, railway clearing accounts office, labour-disputes, new projects, and modification of tariff with a view to assist agriculture and indigenous industries. Railway expenditure has been subjected to critical examination by the legislature, both at the time of voting the budget as well as at other times, through the Standing Railway Finance Committee. Whatever objections might be theoretically visualised against the interference by the legislature in the commercial work of the state, it has been found in practice, in India, that the control so far exercised by the Legislative Assembly and the Council of State has been generally beneficial to the country. It is difficult to estimate how far this increasing political interference in the administration of Indian railways will remain confined within healthy limits. The present view of government is to regard the railways as mainly a big commercial undertaking. The Legislature, on the other hand, demands the adoption of a policy of utilising the entire transport system for the economic and political regeneration of the country. With increased democratisation of the political machinery, the Railway Board will be faced with greatest difficulty in keeping a balance between the commercial administration of the railways and the political demands of the legislature. Unless there is some huge failure in the working, Indian public opinion will, for many years, remain in favour of state-management. The present constitution of

[1] In 1927-28, out of a total of 2,765 questions asked in the Legislature 845 or over 30% were on railway matters. Apart from questions, about 7 resolutions or adjournment motions were moved in connection with railway subjects.

the Railway Board will therefore have to be modified, under any new situation when the Minister for Communications becomes responsible to the legislature. The time has perhaps come to discuss and devise a new machinery, for the control and administration of the railways, which, while ensuring proper regard for the interests of the country, will secure expert and independent management of the lines, free from the dangers of too much political interference. The experience of all democratic countries with nationalised railway systems has been to emphasize the need for maintaining the freedom of railway administrations from political interference.[1] The present organisation for management of the state-railways of Belgium, Germany and Czecho-Slovakia are of particular interest in this connection. In consideration of the special circumstances of India, however, it is difficult to pronounce how far such independence would be in the best interest of the country now. The Indian Legislative Assembly and the Railway Board constantly come into conflict mainly because of the fundamental difference in the policy desired by the two. The Railway Board attempts to run the railways as purely commercial undertakings, but cannot yet free itself from the requirements of the general financial and political policy of the non-responsible executive of the Government of India ; while, the Legislative Assembly is anxious to see the state-railways administered, not so much with a view to profits as to the general advancement of indigenous industry and commerce and the increase in popular control over all governmental machinery. The present policy of Indianisation, purchase of indigenous stores, fostering local railway and other industries, and encouragement to local trade

[1] Even in South Africa, during recent years, the increasing interference by the Legislature and the Minister of Transport has practically rendered the management by the Railway Commission, which was intended to be independent, uneconomical and ineffective. Herbert Frankel, " Railways of South Africa," 1928.

is a result of a compromise between the two views. Such interference, both by government as well as by the legislature, cannot make for most efficient railway management. Should political circumstances change a thorough modification of the present arrangement will have to be made.

II. Outstanding Events (Electrification, Rates Advisory Committee, Workshops Reform, and Publicity)

The outstanding events of the last three or four years have been the beginning of electrification, the appointment of the Rates Advisory Committee, the reform of railway workshops organisation, and the inauguration of Railway Publicity Service.

(*a*) *Electrification.*—The first electrified line, in India, was opened in February 1925, on the Great Indian Peninsula Railway, between Victoria Terminus (Bombay) and Kurla, *via* Harbour Branch. In the following year this electric service was extended to Bandra, and afterwards to Thana and Kalyan. In January 1928, the Bombay Baroda and Central India Railway opened its first electrified section, Colaba terminus to Borivli, and by the following March the electrification of the local and suburban lines of both the railways serving Bombay was practically completed. In 1929 the electrification of the Great Indian Peninsula Railway, main line, up to Poona from Kalyan, across the Ghats, was in progress. The electrification of the South Indian Railway suburban line in Madras was also proceeding, and that of the suburban lines at Calcutta was under examination.

A new phase in train operation has been opened through these electrifications, apart from their social effects on the distribution of population in the big cities. Various sources of hydro-electric supply are now

under examination, and substantial economy in railway work may be secured in future years through the utilisation of this source of power. In some parts of India, particularly in the South, in Bombay Presidency, and in the Punjab, electrification may be a help in meeting road motor competition, which has, for some time, been on the increase, and causing great anxiety to the railways. The following statement shows the traffic carried by Great Indian Peninsula Railway electric trains during the years 1925-29:

Year.	Track Mileage electrified at end of the year.	No. of Passengers (Millions).	Earnings (Lakh Rs.)
1925-1926	19·7	4·8	3·18
1926-1927	71·6	16·2	13·11
1927-1928	71·6	27·4	21·27
1928-1929	167·2	27·0	20·72

(*b*) *Rates Advisory Committee*.—The Acworth Committee recommended the establishment of a Rates Tribunal in India, to adjudicate upon disputes between railways and the public regarding rates and fares. After prolonged consideration of the question the Government of India decided in 1925-26, to set up, not an independent judicial tribunal, but a Rates Advisory Committee, consisting of a President, one Member representing commercial interests, and one Member representative of railway interests. The Committee was accordingly appointed in April 1926, to investigate and report to the Government of India on the following subjects:—

(*i*) Complaints of Undue Preference under Section 42 (2) of the Indian Railways Act, 1890.

(*ii*) Complaints that rates are unreasonable in themselves.

(*iii*) Complaints or disputes in respect of terminals (Section 46 of the Railways Act).

(*iv*) The reasonableness or otherwise of any condition as to the packing of articles specially liable to damage in transit or liable to cause damage to other merchandise.

(*v*) Complaints in respect of conditions as to packing attached to a rate.

(*vi*) Complaints that railway companies do not fulfil their obligations to provide reasonable facilities under Section 42 (3) of the Indian Railways Act.

A former Law Member of the Viceroy's Executive Council was appointed President of the Committee, and the Director of Traffic with the Railway Board was chosen as the Member representing railway interests. As regards the commercial representative it was decided to select one for each individual investigation from a panel consisting of members nominated by various Chambers of Commerce and Trades Associations.

As regards procedure, it was first laid down that applications for a reference to the Committee should be addressed to the Agent of the railway concerned with a deposit of Rs. 100, and within three months of the receipt of such application the Agent of the railway should prepare a statement of the case and submit it with his observations to the Secretary, Railway Board. In January 1927, this procedure was revised, and it was decided that applications should be submitted direct to the Government of India, Railway Department, with a deposit of Rs. 10 only, and copies should be forwarded to the Agent of the Railway concerned. The period of three months allowed to the Agents for submission of their statement was curtailed to two months.

Up to February 1928, thirty-two applications were submitted to the Railway Department. Of these 7 were rejected, 8 withdrawn, and 14 sent to the Rates Advisory

Committee; one awaited the Railway's statement and two were in the process of being sent to the Committee.[1]

By the 31st of March 1928 the Rates Advisory Committee had submitted their report on five cases. The approximate time taken between the submission of an application to the Committee and the final report by them to the Railway Board was 4 to 9½ months in each case. In one case arising out of the complaint of the Grain Merchants of Ajmere against the Bombay, Baroda and Central India Railway, of undue preference in rates for food-grains consigned to the Railway Co-operative Association, the Government of India agreed to the recommendation of the Committee, and had the concession rate withdrawn. In a second case, arising out of the complaint of the unreasonableness of the terminal charge levied by the Great Indian Peninsula Railway for delivery of coal at the private siding of the Portland Cement Company, government did not accept the recommendation of the Committee for remission of the terminal. In the other cases the recommendations were accepted with some modification.

In 1928-29, the Committee reported on nine more cases. The more important of these were: complaint from two firms of undue preference by the Bengal Nagpore Railway in the matter of myrabolam rates from several stations to Kidderpore; complaints from certain cotton-mill owners of Calcutta against North-Western, East Indian and Great Indian Peninsula railways for unreasonable rates in raw cotton as well as in manufactures; complaint from a certain chemical works against six principal railways in regard to the rates for industrial alcohol, country spirits, rectified spirits, and locally manufactured medicine, which were alleged to be unreasonable *per se*. The Committee's report on one case of minor importance was accepted by

[1] Reply to Q. 568 of Mr. G. D. Birla, Legislative Assembly Proceedings, Delhi Session, February 1928.

government, and at the close of the year, their reports on the other cases were under consideration by the Government of India. At the close of 1928-29 there were three cases before the Committee, dealing with terminal charges for jute on the Assam Bengal Railway, rates for marbles on the Great Indian Peninsula, Madras and Southern Mahratta, and South Indian Railways, and rates for piece-goods on the Great Indian Peninsula and Bengal Nagpore Railways.

The experience of the working of the Rates Advisory Committee during the last four years 1925-1926 to 1928-1929, only goes to strengthen the demand for the establishment of an independent Rates Tribunal in India, on the lines of that in Great Britain, as contemplated by the Acworth Committee. The present Advisory Committee is merely a half-way measure and as such it has many weaknesses. The Members are not called upon to exercise that responsible judgment which can only be inspired in a judicial body. The Committee generally appears to act in a spirit of compromise. Again, the knowledge that government may or may not accept the recommendations of the Committee after all the trouble taken and expenses incurred in fighting a case, makes the trader despondent and shakes his confidence. Traders cannot understand why an expensive committee is appointed merely to advise government who has already various officers, both in the railways as well as at the Railway Board, from whom the advice may be had. Moreover, great difficulty is created by the onus of proof practically being laid on the complainant and not on the railway administration. This handicaps the trader a great deal and only a few determined complainants with an amount of expert assistance can contemplate approaching the Committee. Nothing short of a judicial body like the British Rates Tribunal, with extensive powers of calling evidence and modifying rates and fares, will satisfactorily meet the desire of the Indian public in this respect.

(c) *Workshops Reform.*—Both the Acworth Committee and the Inchcape Committee on retrenchment emphasised the need for speeding up repairs to rolling stock, and a number of schemes for the improvement in the capacity and working of state railway workshops on the North-Western, Oudh and Rohilkhund, and Eastern Bengal Railways, had been put in hand by 1925. With the transference of the East Indian and the Great Indian Peninsula Railways to state management an opportunity was presented to effect economies and to improve efficiency by a definite co-ordination of the work of various workshops, and it was felt advisable that the whole of the workshops organisation on the state railways should be overhauled and modernised. A Committee under the chairmanship of Sir Vincent Raven, K.B.E., was appointed in January 1926, to investigate the capacity and conditions of working in the state railway workshops. The Committee recommended an extensive reorganisation of the workshops in view of modern American and British commercial works practice, and the introduction of a scheduling system, having for its object the correct sequence of repairs to component parts, the balancing of operations, and the concurrent working of the various labour gangs. It was expected, that without necessarily speeding up the several operations, this system would eliminate much delay caused through waiting for material, and in addition to lowering the unit repair costs the period of repairs would be reduced, raising the percentage of the rolling stock available for service. The Committee further recommended the concentration of the manufacture of small parts at Jhansi and Jamalpore, the building of all lower-class coaching stock at Lillooah, and miscellaneous four-wheeler coaching stock at Kanchrapara. The economies expected through concentration were :—

(*i*) economic production with the help of single-purpose machines,

(*ii*) greater efficiency of labour,

(*iii*) reduction in the cost of supervision,

(*iv*) facilities for manufacturing all details on an interchangeable basis, and

(*v*) lower labour and raw material costs due to advantageous location of the workshops and better utilisation of these agents.

Certain extensions and remodelling of the existing works, an examination of the workshops accounts system, and a revision of the methods of store-keeping in the workshops were also recommended.

The accounting system was further investigated by Sir Arthur Lowes-Dickinson in 1927.

The Railway Administrations, during the last few years, have carried into effect, on the lines recommended, extensive modernisation and reforms in the methods of working at workshops, and substantial economies have resulted therefrom. Rolling stock is out of commission for much shorter periods now, than in either pre-war or post-war years up to 1924-25 and the necessity of purchasing fresh stock is *pro tanto* diminished.[1]

The following table, giving the repairs of rolling stock of broad and metre gauge Class I railways, shows the nature of the improvements effected :

Percentage of Average Number awaiting or under Repairs to Average Total Number on the Line.

(On Class I Railwoys only.)

	Broad Gauge				Metre Gauge			
	1925-26	1926-27	1927-28	1928-29	1925-26	1926-27	1927-28	1928-29
Engines...	22·6	21·9	20·6	20·0	19·4	19·0	17·7	17·0
Passenger Carriages	15·9	13·4	11·4	10·7	12·0	11·1	9·8	9·9
Goods Wagons	6·6	5·8	5·5	6·5	6·9	6·4	4·1	3·9

[1] A few instances may be cited. On the Eastern Bengal Railway the average cost of a standard locomotive repair was Rs. 2,000 less in November 1928, than in

The improved methods and organisation have enabled considerable reductions in the labour force at the workshops.[1] Some embarrassment has followed in several places on account of this, and from the shop-men a general labour unrest on the many railways has spread. In 1927-28 the Government of India deputed two officers to find out what arrangement should be made in order to secure, as far as possible, efficient and economical working in the workshops, while at the same time safe-guarding the interests of the workmen when a large reduction of establishment was necessary. The problem has not been solved as yet, and in the present year (1930) the whole question of labour unrest and improvement in the conditions of service of the lower grade employees is under investigation. An additional Member of the Railway Board has been appointed for the purpose.[2]

(*d*) *Publicity Service*.—The immense possibility of publicity as a means of encouraging traffic has been realised in India of late years and various advertising work has been undertaken by different railways. The Great Indian Peninsula

November 1927, and the number of days that an engine was out of commission for undergoing repairs in the shops fell from about 92 to 64. On the North Western Railway the cost of repairing a passenger carriage fell from Rs. 776 in November 1927 to Rs. 650 in November 1928, and a vehicle was only 28 days in the shops instead of 42. On the South Indian Railway the cost of repairing a metre gauge wagon fell in the same period from Rs. 260 to Rs. 152. Similar and in some instances more striking reductions in cost were effected on other railways; and all this has been attained not by "any relaxation of the standards of maintenance, which are now probably higher than they have ever been before, but by definite economies in the cost of each repair operation." Explanatory Memorandum to the Railway Budget, 1929-30, p. 5.

[1] In 1927 the B. N. Railway found that an immediate reduction of about 1,600 men in the Kharagpore workshops had become possible. Similar results happened also on the South Indian, Great Indian Peninsula, and North Western Railways.

[2] Railway Budget Speech of the Railway Member, 19th February 1929. The proposal for an additional Member of the Railway Board was not approved by the Railway Standing Finance Committee, but obtained sanction of the Legislative Assembly.

Railway was foremost in this effort and a Publicity Bureau was established at Victoria Terminus, Bombay, in 1924. In addition to supplying information to tourists, the bureau made wide use of newspapers, booklets, leaflets and posters for publicity work. Some other railways, particularly the Bengal Nagpore, Bombay Baroda and Central India, and H. E. H. the Nizam's Guaranteed State Railways also began the publication of attractive time tables, booklets, posters, and picture cards of places of interest on the line. In the beginning, railway publicity propaganda was directed mainly towards attracting upper class tourist traffic.

In 1925-26 a travelling cinematograph car was inaugurated on the Great Indian Peninsula Railway. It advertised railway facilities for the public, illustrated to the masses in outlying districts modern scientific methods of agriculture, etc., in the hope that the adoption of such methods might benefit the ryot and with them the railway, and also included various entertaining and educative films. The cinema was also intended for the education of the staff, and films dealing with the vacuum brake, steam valve gear, breakdown work, firing, lubrication, track maintenance, safety-first and first-aid were prepared.

In 1926-27, the Railway Board decided, primarily with a view to encourage lower class travelling, to establish on each of the state-managed railways, branch publicity bureau on the lines of the Great Indian Peninsula Railway bureau. In April 1927, a Central Railway Publicity Bureau was established at Bombay in charge of a Chief Publicity Officer working under the orders of the Railway Board. The purpose of the central office was to (*a*) co-ordinate and direct the work of the branch bureau, (*b*) control overseas publicity on behalf of the state railways, (*c*) take over and carry out film production

for all the state railways, and (*d*) generally develop all railway publicity activities. The work of film production is also undertaken by the Chief Publicity Officer, and it is claimed to be the foremost of its kind in the world. Owing to the very large proportion of illiterate people in India, the cinema is the outstanding method of conveying information to the masses, and many beneficial results are likely to be obtained from this propaganda. In March 1928 the office of the Chief Publicity Officer was transferred to Delhi.

An interesting feature of railway working and publicity during recent years has been the running of "Demonstration trains," "Trade or Bazar Specials," and upper and lower class "Conducted Tour Specials." The first two are perhaps unique of their kind in the world, consisting of travelling exhibition on matters of public interest, and moving shops of repute, from place to place, during important marketing seasons. The Eastern Bengal Railway has been the pioneer in these activities.

Propaganda has also been undertaken overseas with a view to attract tourists. In co-operation with the P. and O. Steam Navigation Company the running of several luxurious trains from and to Bombay has been arranged, and publicity in Great Britain has been specially pushed. An Indian State Railway Bureau has been opened in London in 1927 and a publicity officer has been appointed for supplying information and advice to potential travellers and to handle enquiries arising out of press propaganda. A similar office in New York, has been opened in 1929. It is not time yet to estimate how far the expenses incurred on publicity work by the Indian state railways are justified.

III. Financial Results

The gross earnings, and consequently the financial results of Indian railways, are intimately bound up with the general conditions of trade and agricultural produce, which again are dependent on rainfall. In 1925 the monsoon was somewhat defective and the aggregate rainfall was 4% below normal over the plains of India as a whole. Agriculture was not very successful and wheat crop was 10% below that in the previous year. There was consequently little or no movement of wheat for export. A general improvement in coaching traffic however, prevented gross earnings from falling heavily. In 1926, although the monsoon was somewhat late, it gave widely distributed rain and better conditions prevailed than in the previous year. In some parts, *e.g.*, in Burma and on the East Coast line, excessive rain caused serious interruptions to traffic, but on the whole there was a revival of movement in most commodities during the last months of the year. Amongst the principal crops, on which railway traffic depends, there was a serious falling off in cotton, a marked increase in jute, and an advance in tea. Wheat and other crops were fairly normal and compared with the previous year there was a definite increase in the traffic. The monsoon of 1927 was on the whole normal, although rainfall was deficient in South-West Punjab, and there were floods in Gujerat and Orissa causing extensive damage and serious interruption to traffic on some main lines. There were marked increase in the cotton crop, jute, wheat, rice, oilseeds, and tea. Taken all round 1927-28 was a most profitable year for the Railways.

The monsoon of 1928-29 was not so helpful for agriculture and on the whole there was a deficiency of nearly 25 per cent. in the rainfall. In Sindh and in parts of the

United Provinces rainfall was particularly defective. But railway traffic did not suffer much on this account.

The following table gives an idea of the conditions of trade during the last four years. Figures for internal movements are no longer compiled in India, and only those for foreign trade are available.

Exports and Imports of General Merchandise in India

In Crores of Rupees.

	1924-25	1925-26	1926-27	1927-28	1928-29
Exports of Merchandise	400	387	311	330	330
Imports of Merchandise	253	236	241	261	263
Visible balance of trade in Merchandise and Treasure...	61	109	40	50	52

Of the important agricultural products that affect railway traffic largely, the export figures were as follows :—

	1924-25 ('000 tons.)	1925-26 ('000 tons.)	1926-27 ('000 tons.)	1927-28 ('000 tons.)	1928-29 ('000 tons.)
1. Raw Cotton	594	745	569	480	663
2. Raw Jute ...	696	647	708	892	898
3. Wheat ...	1,112	212	176	300	115
4. Rice ...	2,301	2,577	2,035	2,152	1,800

In tea and oilseeds, moreover, there was substantial increase in exports in 1927-28 over the previous years.

In imports the share of the different commodities fluctuated greatly, particularly in sugar, iron and steel, machinery, mineral oil, and cotton, raw and manufactured.

The following table gives an idea of the relative importance of different main classes of railways in India in 1928-29. It is necessary to know the nature of the railways in order to understand properly their financial results :—

Class of Railway.	Route Mileage open on 31st March, 1929.	Capital at Charge (*a*) (Lakh Rs.)	Net earning (Lakh Rs.)
I. State Lines worked by State ...	16,269	468,10	21,60
II. State Lines worked by Companies ..	13,304	266,21	16,83
III. Branch Line Companies' Railways	2,512	18,28	1 46
IV. Companies' Lines subsidized by Government ...	2,168	19,04	1,72
V. Lines owned or subsidized by District Boards ...	537	3,00	30
VI. Lines owned or guaranteed by Indian States ...	5,958	46,80*	3,14
VII. Unassisted Companies' Lines ...	108	54	1
VIII. Lines in Foreign Territory ...	74	2,16	17
IX. Miscellaneous, *e g*, Port Trust Line	19	2,36	1
Total (including other items excluded) ..	40,950	831,39	44,25

(*a*) Total Capital outlay in case of other than State-owned Railways, Administration Report, 1927-28, Vol. II, p. 8.

The following summary of Capital at Charge (in case of state-owned railways) and Capital Outlay (on other railways) together with revenue earnings and expenses shows the financial results of Indian railways during the last four years :—

Class of Railway.	Year. (1)	Route Mileage open. (2)	Total Capital outlay on open lines and lines under constn. Lakh Rs. (3)	Gross earnings Lakh Rs. (4)	Working Expenses Lakh Rs. (5)	Net Earnings Lakh Rs. (6)	Operating Ratio. (7)	Percentage of Net earnings on total Capital at Charge. (8)
Class I ...	1925-26	34,696	729,98	109,68	68,72	40,96	62·7	5·61
	1926-27	35,132	758,03	108,72	67,28	41,44	61·9	5·47
	1927-28	35,587	791,36	114,37	69,84	44,52	61·1	5·63
	1928-29	36,748	798,35	114,85	71,18	43,67	62·0	5·47
Class II ...	1925-26	2,977	20,08	3,13	1,96	1.17	62·6	5·82
	1926-27	2,775	21,10	2,99	1,97	1,02	65·7	4·86
	1927-28	2,953	22,37	3,24	2,01	1,23	61·2	5·52
	1928-29	3,154	23,34	3,39	2,00	1,40	58·9	5·98
Class III ...	1925-26	907	4,26	58	41	17	6·99	4·10
	1926-27	1,142	4,98	64	45	19	70·6	3·78
	1927-28	1,171	4,55	61	44	17	72·2	3·73
	1928-29	1,048	4,75	59	42	17	70·4	3·70

(*Continued.*)

Class of Railway.	Year. (1)	Route Mileage open. (2)	Total Capital outlay on open lines and lines under constn. Lakh Rs. (3)	Gross earnings Lakh Rs. (4)	Working Expenses Lakh Rs. (5)	Net Earnings Lakh Rs. (6)	Operating Ratio. (7)	Percentage of Net earnings on total Capital at Charge. (8)
Total State owned Railways.	1925-26	27,430	670,58	99,20	63,41	35,79	63·9	5·34
	1926-27	28,004	696,52	98,62	62,39	36,23	63·3	5·20
	1927-28	28,426	728,88	104,30	64,92	39,38	62·2	5·40
	1928-29	29,451	734,31	104,56	66,13	38,43	63·2	5·23
Total Other Rys. ...	1925-26	11,150	83,73	14,19	7,68	6,51	54·1	7·78
	1926-27	11,045	85,33	13,73	7,30	6,43	53·2	7·53
	1927-28	11,285	87,12	13,92	7,37	6,54	53·0	7·51
	1928-29	11,499	89,82	14,28	7,47	6,81	52·3	7·58
Total (including Miscellaneous)	1925-26	38,579	754,31	113,39	71,09	42,30	62·7	5·61
	1926-27	39,049	788,67	112,36	69,70	42,66	62·0	5·41
	1927-28	39,712	822,86	118,22	72,60	45,66	61·4	5·55
	1928-29	40,950	831,39	118,87	74,62	44,25	62·8	5·32

It will be seen from the above that the financial returns on the capital at charge or expended on various classes of railways, had an all-round depression in 1926-27, and with the revival of agricultural conditions in the latter part of that year and in 1927-28, the position greatly improved. In 1928-29 some amount of the large crop production of the previous year remained to be carried and traffic was brisk in the earlier months. The failure of monsoon rain in the west of the United Provinces and the east of the Punjab, together with strikes at Bombay and at Tatanagore, however, soon caused adverse effects, and some of the increased earnings could not be retained. In 1928-29 net earnings suffered set-back in spite of a slight improvement in the gross earnings, because working expenses rose by nearly two crores. This was largely due to the opening of new lines which could not be immediately remunerative.

Taking into account only those railways with which the Government of India is directly concerned, the following table gives the financial results to the state from the railways :—

Financial Results to the State

(In Lakhs of Rupees.)

	1925-26.	1926-27.	1927-28.	1928-29.
I. (a) Gross earnings	99,70	99,04	104,24	104,34
(b) Surplus profits from Subsidized Companies.	35	40	36	39
(c) Interest on Depreciation and Reserve Funds.	54	64	81	81
(d) Other Miscellaneous Rly. receipts	1	5	8	11
Total Receipts ...	100,60	100,12	105,49	105,90

	(In Lakhs of Rupees.) 1925-26.	1926-27.	1927-28.	1928-29.
II. (*a*) Working expenses (excluding Depreciation).	53,75	53,51	53,87	54,83
(*b*) Depreciation	10,67	10,89	11,36	12,00
(*c*) Surplus profits paid to Companies ...	1,77	1,66	1,57	1,59
(*d*) Land and Subsidy to Companies ...	4	5	5	3
(*e*) Interest ...	24,81	25,87	27,27	29,33
(*f*) Miscellaneous railway expenditure ...	26	66	50	32
Total Expenditure ...	91,31	92,63	94,64	98,09
III. Net Gain	9,28	7,50	10,85	7,81
IV. (*a*) Contribution to General Revenues ...	5,49	6,01	6,28	5,23
(*b*) Surplus transferred to Railway Reserve	3,79	1,49	4,57	2,58
Total Gain to State ...	9,28	7,50	10,85	7,81

The total net gain to the state in 1924-25 was Rs. 13,16 lakhs. There was a falling off in 1925-26, principally on account of decline in earnings with an increase in working expenses and interest charges. Similar reasons accounted for a further fall in 1926-27. The satisfactory result in 1927-28 was due mainly to an increase in earnings without a corresponding addition to working expenses. The increases under "depreciation" and "interest charges" following large additions to capital deserve notice. This, together with increased working expenses, due mainly to the opening of new lines, raised the operating ratio, and the net gain to the state in 1928-29 suffered a heavy fall.

Taking into account the capital at charge of both commercial and strategic lines the percentages of net surplus on the total capital at charge on state-owned railways, during the seven years ending 1928-29, were as follows :[1]

1922-23	4·38	1925-26	5·31
1923-24	5·24	1926-27	5·05
1924-25	5·85	1927-28	5·41
	1928-29	5·23	

[1] These figures differ slightly from those given in a previous table, due to the inclusion of certain 'miscellaneous' and 'other' items. The strategic lines accounted

The accompanying diagram shows the receipts from different sources and how they were distributed in expenses and gain to the state for state-owned railways in 1927-28.

IV. Traffic Results

A. Passengers.—The following table gives the Summary of Passenger Traffic from 1925-26 to 1928-29 on all Indian railways :—

I. Number of Passengers originating[1] (in thousands)

		1925-26.	1926-27.	1927-28.	1928-29.
(*a*) 1st Class	...	1,033	1,012	980	912
(*b*) 2nd ,,	...	9,901	10,006	9,963	9,585
(c) Inter ,,	...	13,602	14,945	17,351	17,870
(*d*) 3rd ,,	...	574,608	578,409	594,821	591,743
Total	...	599,145	604,372	623,115	620,110

II. Passenger-miles (in millions)

		1925-26.	1926-27.	1927-28.	1928-29.
(*a*) 1st Class	...	111	118	129	127
(*b*) 2nd ,,	...	382	420	479	464
(c) Inter ,,	...	623	678	762	765
(*d*) 3rd ,,	...	19,215	19,150	20,334	20,742
Total	...	20,332	20,366	21,704	22,097

III. Average Miles of Passenger-journey

		1925-26.	1926-27.	1927-28.	1928-29.
(*a*) 1st Class	...	108	117	131	139
(*b*) 2nd ,,	...	39	42	48	48
(c) Inter ,,	...	46	45	44	43
(*d*) 3rd ,,	...	33·4	33·1	34·2	35·1
Total	...	33·9	33·7	34·8	35·6

for Rs. 33,24 lakhs of capital or 4·7% of total state capital at charge, and 24·4% of capital at charge on N. W. Railway in 1928-29. The loss on these lines was Rs. 1·75 crores or more than 22% of the net surplus to the state.

[1] The number and earnings of Season and Vendor's tickets are included under the respective classes, the former at the rate of 50 single journeys per month.

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[1] The number and earnings of Season and Vendor's tickets are included under the respective classes, the former at the rate of 50 single journeys per month.

	1925-26.	1926-27.	1927-28.	1928-29
IV. Earnings from Passengers (in lakhs of Rs.)				
(a) 1st Class ...	1,20	1,18	1,14	1,12
(b) 2nd ,, ...	1,89	1,88	1,96	1,92
(c) Inter ,, ...	1,60	1,62	1,69	1,66
(d) 3rd ,, ...	34,77	33,44	34,39	33,54
Total ...	39,46	38,12	39,18	38,24
V. Average rate charged per Passenger-mile[1] (in pies)				
(a) 1st Class ...	20·8	19·1	17·0	17·0
(b) 2nd ,, ...	9·5	8·6	7·8	7·9
(c) Inter ,, ...	4·9	4·6	4·3	4·2
(d) 3rd ,, ...	3·47	3·35	3·25	3·10
Total ...	3·73	3·59	3·47	3·32

Two graphs, given in the following pages, show the growth of passenger traffic from 1900 to 1926-27, keeping season and vendor's ticket-holders separate, and from 1923-24 to 1928-29, distributing these under respective classes. In pre-war reports the sum of the number of passengers carried on each separate railway was shown as the total number carried on all railways. The actual number of passengers carried on all railways is in fact the same as the total number of passengers originating, and this figure has been adopted from 1923-24. As the number originating is not available prior to 1923-24 the figures of pre-war years have been adjusted by the statistics department in drawing the graphs.[2]

From 1923-24 the number and earnings from Season and Vendor's ticket-holders are not separately shown, and are included under their respective classes. This has made the Indian passenger traffic statistics less useful than before for purposes of comparison with other countries where suburban traffic is recorded separately.

[1] The number and earnings of Season and Vendor's tickets are included under the respective classes, the former at the rate of 50 single journeys per month.

[2] See note in Administration Report, 1926-27, Vol. I, p. 20, sec. 36.

The strengthening of the financial position resulting from the separation of railway from general finances and the good years in 1923-24, 1924-25, and 1927-28 enabled the railways to consider reductions in rates and fares during the last three years. In January 1926, the Bengal Nagpore, East Indian, and South Indian Railways made certain reductions in passenger fares. In 1926-27 most of the other railways followed the lead, and on some of the former further reductions were made. The general policy adopted in recent reductions has been to stimulate higher class travel first of all, then long distance lower class, and last of all, if possible, an all-round relief is contemplated. On some of the railways the difference between mail and ordinary train travel fares has been abolished by the reduction of the former.[1]

During 1927-28, 18½ million more passengers were carried on Class I railways than in 1926-27 and passenger earnings increased by Rs. 1 crore. The increase in earnings was partly due to the rise in the average number of miles a passenger was carried as a consequence of the reduction in long-distance fares; but the increase in both numbers and earnings is mainly attributable to the general stimulus given through reduction of fares, and through various innovations and improvements in train services during recent years, including the running of third-class express, conducted tour, and bazar special trains and extensive publicity compaign for traffic.

In 1928-29 the number of passengers on Class I railways fell by more than 5 million, to 608 million, but as a result of lower average rate charged there was an increase in the average distance of travel per passenger, and passenger-mile figures rose by 340 million to 21,248 million. The earnings from passengers, however, decreased by more than one crore of rupees.

[1] Administration Report, 1927-28, Vol. I, and 1928-29, Vol. I, pp. 19-20.

The problem of dealing with passengers travelling without tickets was noticed in 1923 to have become serious, and the Indian Railway Conference Association recommended that the Railways Act should be amended to strengthen the position of the railways in recovering fares and penalties from delinquent passengers. In 1924 more than two million persons were detected travelling without tickets and the amount collected from them was Rs. 25 lakhs. Various methods of strict supervision and travelling ticket inspection have thereafter been introduced.

In August 1926 the East Indian Railway brought into use the "crew system" of checking by which a crew of ticket checkers under a responsible supervisor accompanies each passenger train throughout its run. One ticket checker is posted to each coach and it is his duty to prevent any passenger from entering the carriage without a proper ticket. He is further responsible for collecting the tickets before the passengers alight at their destination station. The arrangement is also designed to prevent misappropriation of recoveries and to protect illiterate passengers against excess recoveries.[1] The Eastern Bengal, Great Indian Peninsula, and South Indian Railways have adopted the system in modified forms, for certain of their sections. The proposal to amend the Railways Act, with a view to make travelling without ticket a cognisable offence under the penal code, did not receive the approval of the Central Advisory Council, who regarded this measure as the last resource. The "crew system" has been found fairly effective to deal with persons travelling without tickets, but whether it is ultimately to the interest of the railways to incur the large expenditure involved in it together with the annoyance and

[1] The practical difficulty of examining the tickets of all passengers entering a train, particularly for suburban services and express trains where detention at stations is an important factor to be avoided, has led in later months to a modification of this procedure.

perhaps delay caused to the vast number of innocent passengers, is doubtful.

B. Goods.—The following table gives the summary of Goods traffic on all Indian railways from 1925-26 to 1928-29:

	1925-26.	1926-27.	1927-28.	1928-29.
I. Tons of Goods carried (originating only) in millions ...	80	86	90	91
II. Net Ton-miles (millions) ...	19,900	20,376	21,902	21,889
III. Average miles a ton of Goods carried	249·2	237·4	243·9	241·0
IV. Earnings from Goods (in Lakh Rs.) ...	64,42	65,08	69,41	71,16
V. Average rate charged per ton-mile (in pies)	6·28	6·12	6·08	6·24

The respective importance of Goods and Passenger Traffic in India is shown in the following analysis of earnings from all lines:

Earnings and Percentage of Total from Goods and Passengers

	1925-26. Lakh of Rs.	%	1926-27. Lakh of Rs.	%	1927-28. Lakh of Rs.	%	1928-29. Lakh of Rs.	%
I. Total earnings ...	113,39	100	112,36	100	118,22	100	118,87	100
II. Earnings from Goods [1] ...	64,83	57·1	65,36	58·02	69,58	58·9	71,16	59·9
III. .. ,, Passengers [1]	39,49	34·8	31,13	33·9	39,18	33·1	38,24	32·2
IV. Parcels, Luggage and Miscellaneous	9,07	8·1	8,87	7·9	9,46	8·0	9,47	7·9

The following table shews the nature of and the work done in connection with the four principal classes of goods traffic on Class I railways only. The traffic on Class I

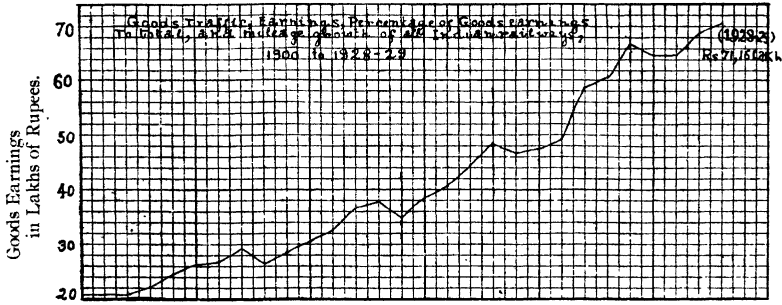
[1] These figures are slightly in excess of those quoted in previous tables on account of the inclusion of certain miscellaneous items.

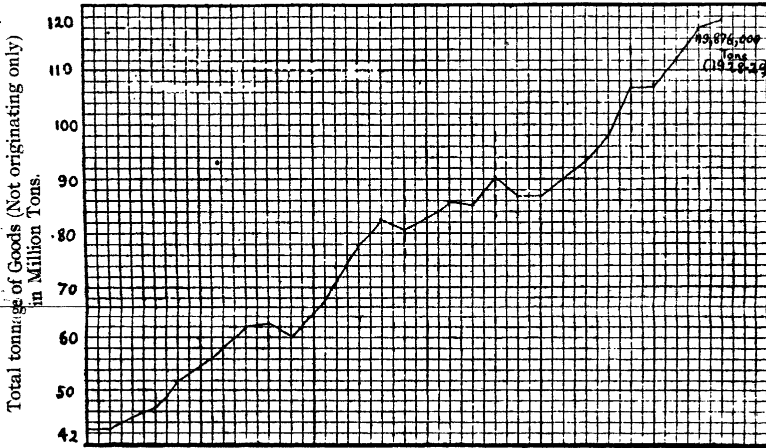
railways alone accounted for 95·7% of the total tonnage conveyed by all railways, and 98·7% of the net ton-miles of freight in 1927-28. Consignments passing over two or more gauges of the same railway are taken as separate consignments in the totals given below :—

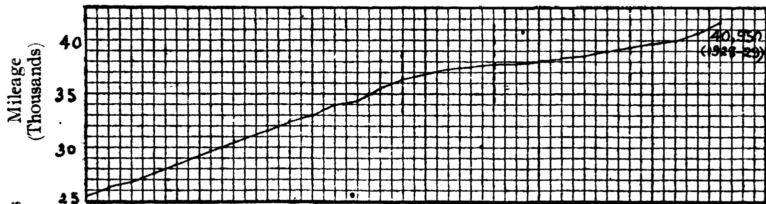
	1925-26.	1926-27.	1927-28.	1928-29.
I. Tons carried (in millions)				
(*a*) General Merchandise & Live Stock	58·8	62·9	66·8	68·1
(*b*) Fuel for Public & Foreign Rys., etc.	22·2	25·1	27·0	26·7
(*c*) Fuel on Revenue Account	7·7	7·0	7·8	7·9
(*d*) Other Revenue Stores	12·6	12·7	11·0	11·5
Total ...	101·2	107·7	112·6	114·3
II. Net ton-miles (in millions)				
(*a*) General Merchandise & Live Stock	11,118	11,332	12,139	12,334
(*b*) Fuel for Public & Foreign Rys., etc.	5,986	6,314	6,752	6,716
(*c*) Fuel on Revenue Account	1,848	1,743	1,987	1,937
(*d*) Other Revenue Stores ...	709	714	742	659
Total ...	19,662	20,103	21,620	21,645
III. Average miles a ton was carried				
(*a*) General Merchandise & Live Stock	189·2	180·1	181·8	181·1
(*b*) Fuel for Public & Foreign Rys., etc.	270·2	252·0	249·9	251·1
(*c*) Fuel on Revenue Account ...	240·6	249·0	253·5	244·5
(*d*) Other Revenue Stores ...	56 2	56·2	67·5	57·2
Total ...	194·2	186·7	192·0	189·4
IV. Earnings (in Lakh Rs.)				
(*a*) General Merchandise & Live Stock	50,70	50,86	54,12	56,11
(*b*) Fuel for Public & Foreign Rys., etc.	9,17	9,58	10,00	10,03
(*c*) Fuel on Revenue Account ...	2,02	2,04	2,39	2,28
(*d*) Other Revenue Stores ...	89	86	98	89
Total ...	62,78	63,41	67,59	69,31

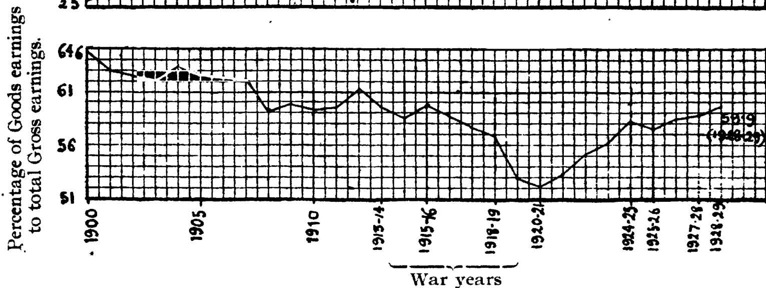
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(d) Other Revenue Stores ...	89	86	98	89
Total ...	62,78	63,41	67,59	69,31


Goods Traffic, Earnings, Percentage of Goods earnings
To total, and mileage growth of all Indian railways,
1900 to 1928-29
Goods Earnings
in Lakhs of Rupees.
70
60
50
40
30
20


Total tonnage of Goods (Not originating only)
in Million Tons.
120
110
100
90
80
70
60
50
42
Tons


Mileage
(Thousands)
40
35
30
25
40,950


Percentage of Goods earnings
to total Gross earnings.
64.6
61
56
51
59.9
1900
1905
1910
1913-14
1915-16
1918-19
1920-21
1924-25
1925-26
1927-28
1928-29
War years

V. Average rate charged per ton-mile (in Pies)	1925-26.	1926-27.	1927-28.	1928-29.
(a) General Merchandise & Live Stock...	8·76	8·61	8·56	8·73
(b) Fuel for Public & Foreign Rys., etc.	2·94	2·91	2·84	2·87
(c) Fuel on Revenue Account ...	2·10	2·24	2·31	2·26
(d) Other Revenue Stores ...	2·40	2·31	2·54	2·61
Total ...	6·13	6·05	6·00	6·15

In April 1926 the rates for long-distance coal were reduced by about 10% to assist industries in Upper India. In 1927-28 and in 1928-29 certain anomalies in the charging of rates on state-managed railways, under new conditions of readjustment following the transfer of the East Indian and the Great Indian Peninsula Railways to state management, were in process of removal. In addition to substantial reductions in passenger fares and charges for parcels and luggage certain reductions in goods rates have been effected in recent years (1926-1929), principally in selected commodities like kerosine, petrol, manure and oilcake, forest products, fresh fruits and vegetables, and long-distance coal, coke, and patent fuel. It was estimated after all these new rates were adopted the average rates charged on these commodities would be only 8 to 12% above pre-war (1913-14) rates.[1]

A graph is attached herewith to show at a glance the growth of goods traffic on all Indian railways since 1900. As the tonnage originating figures are not available before 1923-24, the sum-total of quantities conveyed by each railway is shown throughout.

The following table gives the originating traffic in principal commodities on Class I railways during 1925-26 to 1928-29 :

[1] Budget Speech of Hon'ble Member for Railways and Commerce, Railway Budget, 1929-30.

	1925-26.		1926-27.		1927-28.		1928-29.	
	Tons million.	Lakh Rs.	Tons million.	Lakh Rs.	Tons million.	Lakh Rs.	Tons million.	Lakh Rs.
1. Fuel for Public and Foreign Railways ...	16·1	9,11	18·9	9,65	20·4	10,17	20·1	10,15
2. Materials and Stores on Revenue A/C ...	16·4	2,91	16·1	2,89	14·8	3,37	15·5	3,17
3. Wheat ...	1·6	2,12	1·8	2,53	1·8	2,62	1·8	2,43
4. Rice ...	4·7	4,42	4·1	3,85	4·4	4,11	4·9	4,78
5. Gram and Pulses and other grains ...	3·0	4,19	3 1	4,35	3·0	4,15	3·4	4,80
6. Marble and Stones ...	3·3	94	3·0	88	3·3	1,02	3·6	1,03
7. Metallic Ores ...	2·3	1,07	2·5	1,04	3·0	1,35	2·8	1,32
8. Salt ...	1·3	1,74	1·4	1,89	1·5	1,98	1·5	2,00
9. Wood, unwrought ...	1·7	1,06	1·3	89	1·3	89	1·3	86
10. Sugar ...	0·8	1,85	0·8	1,88	0·8	1,81	0·8	1,99
11. Oil-seeds ...	2·5	3,69	2·4	3,43	2·7	4,15	3·0	4,53
12. Cotton, raw and manufactured ...	1·8	6,42	1·5	5,80	1·5	5,98	1·7	6,17
13. Jute, raw ...	0·9	1,23	1·2	1,78	1·2	1,70	1·2	1,71
14. Fodder ...	0·8	59	0·8	60	0·8	60	0·9	66
15. Fruits and Vegetables (fresh) ...	1·0	91	1·1	91	1·2	1,08	1·2	1,08
16. Iron and Steel, wrought	1·0	2,05	1·0	1,97	1·2	2,28	1·3	2,43
17. Kerosine Oil ...	0·9	1,91	0·9	2,04	1·1	2,26	1·1	2,10
18. Gur, Jagree, Molasses, etc.	0·7	1,06	0·8	1,19	0·8	1,15	0·7	97
19. Tobacco ...	0·3	68	0·3	66	0·3	69	0·3	77
20. Provisions ...	0·6	1,23	0·6	1,31	0·7	1,41	1·0	2,39
21. Military Stores ...	0·3	38	0·4	37	0·4	42	0·4	41
22. Railway Materials ...	3·6	70	8·3	1,20	9·9	1,51	8·3	1,09
23. Live Stock ...	0·2	73	0·2	69	0·2	68	0·2	69
24. Other Commodities ...	10·8	11,89	9·6	11,44	9·7	11,96	9·7	11,47
Total ...	*76·7	62,88	82·1	63,24	85·8	67,34	87·0	69,12

As regards density of traffic on broad gauge lines, the Eastern Bengal Railway has the highest record for passengers, the passenger-miles per route-mile per annum in 1928-29 being 1,086,779. In goods the East Indian Railway tops the list with 1,569,604 net ton-miles per route-mile. Of the metre gauge lines the South Indian Railway has the densest passenger traffic, with a record of more than 800,000 passenger-miles per route-mile in 1927-28, and 679,652 in 1928-29, and the Burma Railways have the heaviest goods traffic with about 420,000 net ton-miles per route-mile in 1927-28, and 399,472 in 1928-29.

The figures for all Class I Railways, according to gauges, are as follows :

Gauges.	Passenger-miles per annum per route-mile.				Net Ton-miles per annum per route-mile.			
	1925-26 '000s	1926-27 '000s	1927-28 '000s	1928-29 '000s	1925-26 '000s	1926-27 '000s	1927-28 '000s	1928-29 '000s
Broad ...	678	664	706	709	853	855	908	886
Metre ...	466	472	488	464	249	251	269	259
2′ & 2′-6″ ...	135	123	120	113	43	41	42	44
Total ...	562	558	587	578	567	572	608	589

V. Working Results

From 1922-23 the statistics of Indian railways have been revised and made more scientific than before. Monthly statistics are compiled and published to enable operating officers to exercise more effective control and comparative check than could be possible under previous arrangements.

The operating ratio for different classes of railways and for all Indian lines have been given in a previous table in this chapter, under 'Financial Results.'[1] Steady improvement was noticed in this respect till 1927-28. In 1928-29, however, there has been a set-back.

Earnings and Working Expenses per Train-mile

	Gross Earnings per Train-mile Rs.				Working Expenses per Train-mile Rs.				Net Earnings per Train-mile Rs.			
	1925-26	1926-27	1927-28	1928-29	1925-26	1926-27	1927-28	1928-29	1925-26	1926-27	1927-28	1928-29
Class I Railways ...	7·11	6·69	6·65	6·46	4·45	4·14	4·05	4·00	2·65	2·55	2·60	2·46
,, II ,, ...	5·24	4·87	4·99	5·17	3·28	3·20	3·09	3·05	1·96	1·67	1·90	2·13
Total, all Railways.	6·99	6·58	6·55	6·38	4·38	4·08	4·00	3·95	2·61	2·50	2·55	2·44

[1] See Table, pp. 345-46.

The business handled compared with the service performed by Class I railways are shown below. These figures which do not include materials and stores carried in departmental trains, represent about 97% of the total traffic carried by all Indian Railways.

	1925-26.	1926-27.	1927-28.	1928-29.
1. Passenger-miles (in millions)	19,512	19,603	20,908	21,248
2. Passenger Train-miles[1] ,,	84	89	94	98
3. Net Ton-miles ,,	19,662	20,103	21,620	21,152
4. Goods Train-miles[1] ,,	66	65	68	69

In the following table is shown the proportion of unproductive engine-miles to 100 productive train-miles and the railway administrations can be congratulated on the progress made in reducing shunting miles :

Shunting Miles per 100 Train-miles.

	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.	1926-27.	1927-28.	1928-29.
1. Passenger and Proportion of Mixed ...	6·46	5·62	5·25	5·29	5·85	5·64	5·49	5·4[illegible]
2. Goods and Proportion of Mixed ...	40·5	39·7	38·0	36·9	32·2	31·8	32·4	32·8

The use of engines not directly productive to total may also be seen from the following table of train-engine and

[1] With proportion of mixed

other engine hours of Class I railways :—

	1925-26.		1926-27.		1927-28.		1928-29.	
	'000 hours.	% of total.	'000 hours.	% of total.	'000 hours.	% of total.	'000s hours.	% of total.
1. Total Engine hours .	22,153	100	22,289	100	23,370	100	23,933	100
2. Train Engine ,, ...	11,671	52·8	11,651	52·2	12,126	51·9	12,518	51·9
3. Shunting Engine hours	5,940	27·0	5,741	25·8	5,835	24·9	5,901	24·9
4. Others (assisting reqd. and not reqd. & light)...	2,847	12·9	3,058	13·7	3,431	14·6	3,502	14·6
5. Departmental ...	1,695	8·3	1,839	8·3	1,978	8·6	2,012	8·6

The average through speed of trains on Class I railways from start to finish, inclusive of stoppage *en route*, was as follows :—

Train-miles per train-engine-hour.	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.*	1926-27.	1927-28.	1928-29.
1. Passenger trains ...	19·5	19·9	20·1	20·2	16·1	16·2	16·3	16·1
2. Mixed trains ...	13·4	13·5	13·5	13·6	12·3	12·3	12·3	12·2
3. Goods trains (Main Line)	9·7	10·1	10·2	10·1	9·0	9·2	9·4	9·5
4. Goods trains (Branch) ..	8·9	9·1	9·0	9·2	9·5	9·7	9·6	9·5

The average loads of trains in vehicles and wagons and in average number of tons in a goods train of Class I railways were :—

Average Train load.	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.	1926-27.	1927-28.	1928-29.
1. Vehicles in Passenger trains ..	17·0	17·1	17·1	16·9	18·3	18·1	18·3	18·1
2. Wagons (loaded and empty) in goods trains on main lines ...	46·1	47·0	48·2	47·9	40·3	40·5	41·5	41·2
3. Freight in Goods trains (tons) ...	372	381	390	383	156	157	164	161

As regards the time-keeping of passenger-trains, the heavy programme of renewals and improvements of permanent way, that has been undertaken in recent years, seriously interferes with punctual running. Yet the figures shown below indicate fair progress in this respect :

All Passenger Trains.	Broad Gauge.				Metre Gauge.			
	Feb. 1925.	Feb. 1926.	Feb. 1927.	Jan. 1928.	Feb. 1925.	Feb. 1926.	Feb. 1927.	Jan. 1928.
1. Percentage of trains arriving right time to number of trains run ...	61·0	71·8	73·6	77·8	64·9	70·5	68·2	65·6
2. Percentage of trains under 10 mins. late to number of trains run ...	19·3	16·4	15·4	12·5	12·8	11·2	13·4	12·1
3. Total of (1) and (2) above	80·3	88·2	89·0	90·3	77·7	81·7	18·6	77·7

It may be of interest to note in this connection that in India, there are more than ten long-distance through passenger services, over two or more railways, maintained, each covering a journey of above 1,000 miles without necessitating any change. Two of these from Howrah to Peshawar and from Bombay to Peshawar extend over more than 1,500 miles.[1]

Further, a new standard of journey has been instituted by the introduction from 1926-27 of several luxurious trains run regularly in connection with overseas mail and other boat services.

Mention should here be made of the arrangements by the East Indian Railway for dealing with the exceptionally large ' mela ' (fair) in the spring of 1927. The Kumbha

[1] From April 1929 the longest through train service in India covering about 2,500 miles was instituted between Mangalore and Peshawar following upon the opening of the long-desired Kazipet-Ballarsha section of N. G. S. Railway.

Mela, as this pilgrimage is called, occurs every 12 years, and the heavy traffic that the railways had to meet in the last gathering can be judged from the fact, that over a single line of a main and a branch to Hardwar, more than 692,000 inward and outward passengers had to be carried in 40 days, about half being conveyed in 10 days. This necessitated the running of 143 inward and 206 outward special trains, and to ensure smooth working, elaborate preparations were made. Moreover, the traffic was worked by means of the " flow " system under which trains were run in one direction only for certain definite periods during the 24 hours. Not a single goods wagon was used for the conveyance of pilgrims, special indents of passenger vehicles being made from different railways to meet the exceptional demand. This was the first time that such efficient service was rendered to the lowest class pilgrim traffic. Similar arrangements were made in January 1930 to handle the " Mela " traffic at Allahabad.

In the running of goods trains as well, various improvements have been effected in recent years, the most outstanding of which are the use of heavy engines with a view to haul heavier trains, and the extensive introduction of the vacuum brake throughout each train. By the end of 1926-1927 the majority of broad gauge goods trains had wagons equipped with vacuum brakes throughout, and the percentage of goods trains run with full vacuum fitting to the total was on many lines more than 99% . The advantages secured through this include increased safety in train-operation, improvement in speed, reduction in brake-van tonnage on inclines, and localisation and prevention of theft of vacuum fittings. The increase in the number of goods wagons fitted with vacuum brakes has been brought about by a system of levying extra charges on the interchange of wagons not properly equipped. The introduction of automatic centre-buffer coupler has also been proposed, and

trials of the Willison coupler are being continued both for wagons and for coaches.

Another interesting improvement in train-running, introduced since 1925, is the introduction of headlights for locomotives, and external train lighting. The headlights were adopted as a safety-measure to enable drivers to see any defects of or obstructions on the permanent-way, due either to natural causes like floods, etc., or to mischief caused by wild animals, robbers, or malcontented labourers. By March 1928 all locomotives working mail, passenger or mixed trains on state-worked lines, as also several goods engines had been provided with these lights.

The system of external train lighting serves to augment the lighting of platforms of small roadside stations and is of assistance to passengers, especially at stations with low platforms. It further provides an additional safe-guard against trespass into ladies' compartments, trespass on the off-side of trains when at stations, and train-robberies. Certain carriages on each train are fitted with two or more electric lights on either side, which are switched on, by an automatic device, whenever the speed of the train falls below a certain rate, and remain on until the train again resumes that speed.

In addition to these improvements in the running of trains various devices are gradually being introduced, such as automatic luggage-weighing machines, loud-speakers for the anouncement of arrival and departure of trains and other directions for passengers, lighted train indicator boards, separate booking windows for men and women, and uniformed and plain-dress supervisors, at big terminal stations like Calcutta and Bombay. Amenities to third class travel for which the public and the legislature of India are insistent have also received continued attention.

As regards rolling-stock user, the figures for engine usage on Class I railways were :—

	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.	1926-27.	1927-28.	1928-29.
1. Engine-miles per day per engine on the line.	57·8	60·8 (*a*)	66·1	69·7	63·3	65·4	69·2	69·9
2. Net Ton-miles per good locomotive day.	11,913	11,678	12,445	12,976	6,564	6,319	6,621	6,920

(*a*) Revised figures given in Statement 22, Vol. II of Administration Report 1927-28. The figure in the Summary is 76·2.

The Coaching Vehicles and Wagons user figures, excluding departmental, were the following :—

In terms of 4-wheelers.	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.	1926-27.	1927-28.	1928-29.
1. Coaching Vehicle-miles (millions), Passenger and Proportion of mixed (*x*)	975	1,038	1,097	1,132	516	327	553	560
2. Vehicle-miles per Vehicle day.	(*y*)	(*y*)	135	140	(*y*)	(*y*)	107	103
3. Wagon-miles (millions).								
(*a*) Loaded ,,	1,259	1,253	1,345	1,380	499	509	543	550
(*b*) Empty ,,	588	583	625	618	187	184	189	197
(*c*) Total ,,	1,846	1,836	1,970	1,998	685	692	732	748
4. Percentage of loaded wagon-miles to total.	68·2	68·3	68·2	69·1	72·8	73·5	73·5	73·6
5. Wagon-miles per wagon day.	34·2	33·1	34·8	37·3	30·8	30·5	31·5	31·2
6. Net-ton-miles per wagon day.	295	293	311	329	148	146	156	153
7. Average Wagon Load (tons) of total traffic (*z*)	12·6	12·9	13·0	12·6	6·6	6·5	6·6	6·6

(*x*) Figures in Summary Table XIII of Vol. II Administration Report for 1925-26 and 1926-27 are given for passenger vehicle-miles only, and they are not to be compared with figures in the same table for 1927-28, which is for all coaching vehicles.

(*y*) Information not available.

(*z*) Average wagon-load, of loaded wagons only, for all traffic. From 1925-26 the average starting wagon-loads analysed under coal and coke, heavy merchandise and light merchandise are shown separately. Statement 23, Vol. II, Annual Administration Reports.

The improvement effected in the availability of rolling stock has been noted under workshops reforms dealt with in section II (c) of this chapter.

The efficiency of Class I railways as determined by wagon-miles per engine-hour and net-ton-miles per engine-hour was as follows :—

	Broad Gauge.				Metre Gauge.			
	1925-26.	1926-27.	1927-28.	1928-29.	1925-26.	1926-27.	1927-28.	1928-29.
1. Wagon-miles per engine hour ...	179	183	188	188	155	155	155	154
2. Net-ton-miles per engine hour ...	1,563	1,613	1,665	1,641	739	733	759	748

The share of each department in the working expenses of Class I railways, and the percentage of gross earnings spent on each as indicating the ultimate efficiency, from the point of view of costs, are shown below[1] :—

	1925-26.		1926 27.		1927-28.		1928-29.	
	Lakh Rs.	% of gross earnings.	Lakh Rs.	% of gross earnings.	Lakh Rs.	% of gross earnings.	Lakh Rs.	% of gross earnings.
1. Maintenance of structural works ...	14,32	13·1	14,16	13·0	16,00	14·0	16,24	14·1
2. Maintenance and supply of locomotive power ...	23,23	21·2	21,86	20·1	21,98	19·2	22,14	19·3
3. Maintenance of Carriage and Wagon Stock ...	9,83	9·0	9,85	9·1	9,90	8·7	9,57	8·3
4. Expenses of Traffic Department ...	11,57	10·6	11,39	10·5	11,56	10·1	12,03	10·5
5. Expenses of General Departments ...	4,95	4·5	5,06	4·7	5,03	4·4	5,12	4·5
6. Miscellaneous including electric service, ferries, and harbours, compensations, etc. ...	4,74	4·2	4,88	4·4	5,30	4·6	6,01	4·9
7. Total Working Expenses	68,73	62·7	67,28	61·9	69,84	61·1	71,18	62·0

[1] Statement No. 7, Administration Reports, Vol. II, 1926-27, 1927-28 and 1928-29.

In concluding this section mention should be made of the revision of general rules for working open lines effected recently. In 1925 a Committee was appointed for examining and recommending necessary modifications, and in December 1927 the Railway Board issued the revised rules which were brought into force from 1st January 1929.

VI. Reduction of Stores Balances and Compensation Claims.

In 1922-23 the Inchcape Committee on retrenchment of expenditure drew attention to the locking up of a large amount of capital in stores balances, and to the heavy payments made by the railways as compensation for goods lost or damaged. The railway administrations and the Stores Department have thereafter made special efforts to reduce these charges with good result. The measures taken in the reduction of compensation payments include improvement in the design and construction of wagons, proper rivetting or locking of loaded wagons, better supervision of the staff, and greater efficiency of the Watch and Ward Department. The economies effected in stores balances and in compensation claims payments can be seen from the following :—

In Lakhs of Rupees.

	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
1. Stores Balances:	22,99	21,58	17,09	15,68	14,69	17,33	17,09
2. Claims for goods lost or damaged, paid by Class I Railways (excluding Jodhpur Railway). ...	120·30	78·97	56·70	29·32	15·22	9·50	10·93

In the reduction of stores balances there was a set-back in 1927-28 mainly on account of materials obtained for heavy renewal and construction programmes in progress not being utilised before the close of the year. A slight improvement was again effected in 1928-29.

The reduction in compensation claims payments, effected during the five years 1922-23 to 1927-28, on Class I railways was remarkable, the payments in 1927-28 being only 8 per cent of that of 1922-23. On the East Indian Railway alone, which accounts for the biggest payment under this head, the charges came down from Rs. 58 lakhs to Rs. 2 lakhs in those five years.

VII. Road Motor Competition

As has been the experience in other countries, railways in India have begun to feel the competition of road motor-vehicles. The absence of good roads and the increasing desire of local and district boards to levy heavy taxes on motor-vehicles to maintain the roads they use in proper order, will act as a check to the growth of road motor-competition to a degree menacing to the railways in India. The railways have therefore little to be afraid of in the development of road traffic. On the other hand, as has been suggested by the Jayakar Committee on Road Development (1928), the inter-relation of Indian road and railway policies, with a view to effect co-ordination of work, is both possible and highly desirable. Good roads in India can render much service by providing feeders for the railways and by enabling them to concentrate their terminal facilities at large centres. In many parts of India the zone tapped by a line of railway is extremely limited. In dry weather it does not exceed 20 miles—a day's journey by bullock cart—on either side of the line. In the rainy season it may be reduced to a few hundred yards for more than

a week at a time. With even passable roads the use of motor transport would be more than double the depth at all seasons. Thus, the advent of road motor service in India is to be desired more than feared, provided that there can be maintained a proper check on both the railways and road motors from uneconomic competition, and unnecessary duplication of services.

The general policy adopted by the railway administrations up to the present time has been to meet road competition, wherever that is growing, by improving railway service to the public, while taking full advantage of the additional business brought by such motor transport as can act as feeders or distributors. At present, road competition is felt in the neighbourhood of large cities, and in some parts where good roads exist parallel to the railway or make a short circuit between two railway points. Railway administrations are carefully watching, with detailed statistics, all such competitive services, and during the last three or four years, experiments of different methods have been tried to meet the situation. These include the running of rail "omnibuses," composed of one or two bogie 3rd class carriages and a small engine, picking up and setting down passengers at level crossings and elsewhere, tickets being issued on the train by a conductor. 'Sentinel' trains with 'sentinel' tractor and three or four four-wheeler coaches are also being tried, and in some places it has been found necessary to replace the short trains by full-length ones in order to meet the development of traffic. In 1927-28 the East Indian Railway introduced the rail-*cum*-omnibus monthly tickets, in co-operation with the Calcutta Tramways Company, with a view to co-ordinate rail and road transport facilities for suburban passengers into Howrah.

The general effect of road competition on most of the lines has been to draw increased attention to the need for more frequent and conveniently timed services on the

railways than had been provided in the past. Certain narrow-gauge lines have been hit more adversely than others, and a careful guidance of road development may in future years obviate the construction of railways of smaller gauges than the metre. Thus it may partially relieve the difficulty of the gauge problem in the country.

In connection with the growth of road transport an interesting development has been the increased tendency for the railways to establish cartage services particularly for the collection and delivery of parcels, luggage, and light goods in big cities.

It may not be out of place to mention here that in many parts of India a more extended co-ordination with water transport is also called for. This was felt many years ago, particularly on the Eastern Bengal and Assam-Bengal Railways, and working agreements were entered into between the railwys and steamer companies. Rightly or wrongly one of the complaints made against some of the railways in India is that through their policy of constructing high embankments, without sufficient openings for the free flow of natural water-courses, they have been responsible partly for the deterioration of the rivers and canals. Whatever might have been the interest of companies managing the railways in the past, now that the railways are the property of the State, it is claimed that, in the interest of the health and agricultural prosperity of the people, and ultimately of the railways, a thorough enquiry should be instituted into the matter.[1]

The best interests of the country can be served only by a proper co-ordination of various means of transport, and not through the development of one kind only, however efficient that may be absolutely. Road, water, and even air afford opportunities for cheaper and more efficient conveyance in certain cases, and it is not wise policy for the

[1] Dr. Bentley, Director of Public Health, Bengal, endorses this view in his book "Malaria and Agriculture in Bengal," 1927.

railways to run into uneconomic competition with these where natural and other advantages are obviously in their favour. It is high time that our railway policy and future developments should be adjusted to the present position as well as to the future possibilities of other methods of transport, particularly the road motor, air-vessels, and inland steamers. To effect a healthy and judicious co-ordination of all means of transport the institution of a Ministry of Communications, along lines suggested by the Acworth Committee, with necessary re-shuffling of the provincial and central subjects, is urgently called for.

VIII. Conclusion

At the close of a detailed study of the development of railways in India extending over more than eighty-five years one can only feel happy, that in spite of many faults of omission and commission by the authorities in the past, the people of India have been secured not only a valuable property yielding a substantial revenue annually, but also a machine that has united them into a nation. Much remains yet to be done in the matter of revising the tariff, amending the Railways Act, and in setting up proper machinery for dealing with complaints and for inspiring complete public confidence in the management of this vast public property ; but, it cannot be denied that as regards operating efficiency the railways of India to-day do not stand much inferior to the more advanced railways of the world. Credit for this is due no less to the officers of the state than to those of some of the companies. Above all, for the present progressive stage, the railways of India and the Indian people stand indebted to the late Sir William Acworth under whose chairmanship the enquiry of 1920-21 was conducted.

It may be noted, that the control of transportation facilities is an important factor in the maintenance of law and order, and the domination of one country by another.

In a state of political struggle that India is passing through, it is not unnatural that much will be made of the political and economic strategies that lie behind the Indian railway policy.

The political and economic strategies alleged are :

(*a*) Increase in military efficiency.

(*b*) Development of an extra-legal consular and fighting corps.

(*c*) Furnishing of supplies for construction, and otherwise helping in the investment of capital.

(*d*) Employment of Britishers in the construction and operation work and generally opening out new avenues of service for them.

(*e*) Granting rates directly or indirectly preferential to British trade and industry.

(*f*) Making railway alignments to suit the development of a particular course of trade in which Great Britain is interested.

Doubtless these were not absent from the mind of Lord Dalhousie when he argued with great vigour the case for the construction of railways in India.[1] But, long before the close of the 19th century, the huge benefits that the railways brought to the country largely overshadowed these possible strategies. Of the last decade it may be stated generally, that partly as a result of the vigilance of the Legislature and partly as a consequence of an enlightened recognition of the best interests of India by Government, considerable improvements have been effected both in the policy as well as in the working of Indian railways. The efforts of the present administrations in these respects deserve appreciation, and it is hoped, that in a few years, that mutual trust and confidence between the users and the managers of the railways will be established, which, after all, forms the best guarantee for efficient handling of India's varied and intricate transport problems.

[1] Lord Dalhousie's Minutes, dated 4th July 1850 and 20th April 1853.

APPENDIX I

Resolution on Separation of Railway Finance, 20th September, 1924

This Assembly recommends to the Governor-General in Council that in order to relieve the General Budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the railways :

1. The Railway Finances shall be separated from the General Finances of the country and the general revenues shall receive a direct annual contribution from railways which shall be the first charge on the net receipts of railways.

2. The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year, *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge, surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution

so calculated in order to arrive at the net amount payable from railway to general revenues each year.

3. Any surplus remaining after this payment to general revenues shall be transferred to a Railway Reserve; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees, only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

4. The Railway Reserve shall be used :—to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depreciation, and for writing down and writing off capital; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and the rates may be reduced.

5. The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from capital or from the reserves, for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget, subject to the obligation to make repayment of such borrowing out of the revenue budgets of subsequent years.

6. A Standing Finance Committee for Railways shall be constituted consisting of one nominated official Member of the Legislative Assembly and eleven Members elected by the Legislative Assembly from that body. The Members of the Standing Finance Committee for Railways shall be *ex-officio* Members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official Member, six nominated Members selected from a panel of eight elected by the Council of State from that body, and six non-official Members selected from a panel of eight selected by the Legislative Assembly.

The Railway Department shall place the estimates of railway expenditure before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the Demand for Grants for railways, and shall, as far as possible, instead of the expenditure programme revenue, show the expenditure under a depreciation fund created as per new rules for charge to capital and revenue.

7. The Railway budget shall be presented to the Legislative Assembly, if possible, in advance of the General budget, and separate days shall be allotted for its discussion, and the Member in charge of Railways shall then make a general statement on railway accounts and working.

The expenditure proposed in the railway budget, including expenditure from the Depreciation Fund and the Railway Reserve, shall be placed before the Legislative Assembly in the form of Demand for Grants. The form the budget shall take after Separation, the details it shall give, and the number of Demands for Grants into which the total vote shall be divided, shall be considered by the Railway Board, in consultation with the proposed Standing Finance Committee for Railways, with a view to the introduction of improvement in time for the next budget, if possible.

8. These arrangements shall be subject to periodic revision, but shall be provisionally tried for three years.

In view of the fact that the Assembly adheres to the Resolution passed in February 1923, in favour of state management of Indian railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing state-managed railways remain under state management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to company-management, such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter

in the Assembly. If any contract for the transfer of any of the above railways to company-management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this resolution.

Apart from the above convention this Assembly further recommends :

(*i*) That the railway services should be rapidly Indianised, and further that Indians should be appointed as Members of the Railway Board as early as possible; and

(*ii*) That the purchase of stores for the state railways should be undertaken through the organization of the Stores Purchase Department of India.

APPENDIX II

Capital Outlay and Earnings of all Indian Railways (1900 to 1928-29)

Year.	Mileage open in Thousands.	In Lakhs of Rupees. Total Capital outlay.	Gross Earnings.	Working Expenses.	Net Earnings.	Operating Ratio.	Percentage of Net Earnings to Capital Outlay.
1900	24·7	329,61	31,54	15,09	16,45	47·8	4·99
1901	25·3	339,17	33,60	15,72	17,88	46·8	5·27
1902	25·9	349,77	33,93	16,70	17,22	49·2	4·92
1903	26·8	341,11(*a*)	36,01	17,11	18,90	47·5	5·54
1904	27·5	347,91	39,67	18,79	20,88	47·4	6·00
1905	28·3	358,26	41,70	19,95	21,75	47·8	6·07
1906	29·1	371,01	44,14	22,02	22,11	49·9	5·96
1907	29·9	391,87	47,30	24,32	22,98	51·4	5·86
1908	30·6	411,92	44,83	27,00	17,82	60·2	4·33
1909	31·5	429,83	47,06	26,38	20,68	56·1	4·81
1910	32·1	439,45	51,14	27,16	23,98	53·1	5·46
1911	32·8	450,07	55,28	28,84	26,44	52·2	5·87
1912	33·5	465,15	61,65	30,16	31,49	48·9	6·77
1913-14(*b*)	34·6	495,09	63,58	32,93	30,65	51·8	6·19
War Years: 1914-15	35·3	519,22	60,43	32,75	26,68	54·2	5·33
1915-16	35·8	529,98	64,66	32,92	31,74	50·9	5·99
1916-17	36·3	535,28	70,68	33,40	37,28	47·2	6·96
1917-18	36·3	541,80	77,3)	35,39	41,99	45·7	7·75
1918-19	36·6	549,74	86,29	41,80	44,48	48·4	8·09
1919-20	36·7	566,38	89,15	50,66	38,50	56·8	6·80
1920-21	37·0	626,81	91,99	60,29	31,70	65·5	5·06
1921-22	37·3	647,97	92,89	70,80	22,09	76·2	3·41
1922-23	37·6	697,46	105,65	72,99	32,66	69·1	4·68
1923-24	38·0	717,93(*c*)	107,80	68,45	39,35	63·5	5·48
1924-25	38·3	733,37	114,75	69,37	45,39	60·4	6·19
1925-26	38·6	754,31	113,39	71,09	42,30	62·7	5·61
1926-27	39·0	788,67	112,36	69,70	42,66	62·0	5·41
1927-28	39·7	822,86	118,26	72,60	45,66	61·4	5·55
1928-29	40·95	831,39	118,87	74,62	44,25	62·8	5·32

(*a*) On open lines only from this date.

(*b*) 1st quarter of 1913 ignored for statistical purposes.

(*c*) Total Capital at Charge and not Total Capital Outlay given from 1923-24.

APPENDIX III

Charges Borne by or Contributions made to General Revenues on account of Indian Railways[1]

IN LAKHS OF RUPEES.

Year	Gain + or Loss −
1848–49 to 1860–61	− 6,42
1861–62 to 1870–71	− 16,74
1871–72 to 1880–81	− 19,77
1881–82 to 1890–91	− 15,57
1891–92 to 1900–01	− 17,45
1901–02	+ 1,41
1902–03	+ 24
1903–04	+ 1,04
1904–05	+ 2,96
1905–06	+ 2,83
1906–07	+ 3,40
1907–08	+ 2,35
1908–09	− 1,86
1909–10	+ 1,22
1910–11	+ 2,97
1911–12	+ 5,61
1912–13	+ 7,13
1913–14	+ 7,18
1914–15	+ 3,24
1915–16	+ 6,11
1916–17	+ 11,37
1917–18	+ 14,87
1918–19	+ 15,84
1919–20	+ 9,34
1920–21	+ 5,65
1921–22	− 9,27
1922–23	+ 1,22
1923–24	+ 6,47
1924–25[2]	+ 6,77
1925–26	+ 5,48
1926–27	+ 6,01
1927–28	+ 6,28
1928–29	+ 5,23

Total losses to 1901: Rs. 75,95 Lakhs.
Balance of Gains and Losses, 1901 to 1928-1929 : Rs. 131,09 Lakhs.

[1] Figures before 1913-14 are obtained from Annual Financial Statements, the railway year up to 1912 having been calendar years only. The other figures are from Annual Administration Reports for Railways.

[2] From 1924-25, when the Railway Reserve Fund was created, the contributions to general revenues do not indicate the net surplus. These were as follows:—

1924-25 Rs. 13,16 Lakhs. 1926-27 Rs. 7,50 Lakhs.
1925-26 Rs. 9,28 ,, 1927-28 Rs. 10,15 ,,
1928-29 Rs. 7,81 Lakhs.

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